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BRACHIOPODA

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7. BRACHIOPODA

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H. M. MUIR-WOOD, D.Sc.

CONTENTS

	PAGE
I. TITLES	1
II. SUBJECT INDEX	8
III. SYSTEMATIC INDEX	10

I.—TITLES

1.—Ager, D. V. The genus *Gibbirhynchia* in the British Domerian. Proc. Geol. Assoc. Lond. **65** 1 1954 : 25–51 1 pl. 7 text-figs.

2.—Alikhova, T. N. Handbook of the Brachiopod Fauna of the Ordovician of the N.W. part of the Russian platform. Trud. Vses. Nauchno-Issledov. Geol. Inst. Moscow 1953 : 1–127 17 pls. [In Russian.]

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5.—Andjelković, M. Z. Existence des sédiments fossilifères neritiques et bathyals du Crétacé inférieur au sud du village " Rušanj " (environs de Beograd). Rec. Trav. Inst. Geol. " Jovan Zujovic ", Beograd **7** 1954 : 69–87. (In Serbian, resumé in French). (Brachiopods mentioned.)

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7.—Banks, M. R. Permian, Triassic and Jurassic Rocks in Tasmania. Symposium sur les séries de Gondwana. Congrès Intern. géol. Alger **19** 1952 : 63–88. (Brachiopods mentioned.)

8.—Barbosa, O. Comparison between the Gondwana of Brazil, Bolivia and Argentina. Symposium sur les séries de Gondwana. Congrès géol. intern. Alger **19** 1952 : 313–324.

9.—Bartenstein, H. & **Burri,** F. Die Jura-Kreide-Grenzschichten im schweizerischen Faltenjura und ihre Stellung im mittel-europäischen Rahmen. Eine Untersuchung auf mikropaläontologischer Grundlage. Eclog. geol. helv. **47** 2 1954 : 426–443 pl. 28. (Young Brachiopod mentioned and figd. pl. 28.)

10.—Besairie, H. Les formations du Karroo à Madagascar. Symposium sur les séries de Gondwar . Congrès intern. géol. Alger **19** 1 52 : 181–186.

11.—Biernat, G. Brachiopods from the Couvinian of Grzegorzowice. Acta Geol. Polon. Warszawa **4** 1954 : 485–533 (in Polish) ; sep. pag. 145–146 (Russian), 147–154 (English), 6 pls. 23 text-figs.

Bogush, O. I. *see* Lisitzina, N. A.

12.—Born, A. El tramo de *Calymene tristani* en Almadén. (Ordoviciense medio) su fauna, división y extensión. [Translated from Abh. Senck. Naturf. Ges. 36 3 1916.] Publ. extran. Geol. Esp. **7** 3 1953 : 173–259. (Brachiopods figd. pl. 13 and pp. 214–218)

Bradshaw, R. *see* Roques, M.

Brodie, J. W. *see* Wellman, H. W.

13.—Brunnschweiler, R. O. Mesozoic Stratigraphy and History of the Canning Desert & Fitzroy Valley, Western Australia. J. Geol. Soc. Austral., Adelaide **1** 1954 : 35–54. (*Lingula* recorded.)

14.—Burk, C. A. Faunas and age of the Amsden formation in Wyoming. J. Paleont. **28** 1 1954 : 1–16 pl. 1 text-figs. 1–6.

15.—Burri, F. Beiträge zur Systematik der Brachiopoden aus der untersten Kreide im westschweizerischen Juragebirge. Eclog. geol. helv. **46** 2 1953 : 269–285 7 text-figs. and pl. xv.

16.—Burri, F. Die Morphogenese von *Sulcirhynchia valangiensis* (Brachiopoda). Eclog. geol. helv. **47** 2 1954 : 419–425 7 text-figs.

Burri, F. *see* Bartenstein, H.

17.—Busse, E. Profil der unteren und mittleren Ceratitenschichten vom Eisenberg bei Hessisch-Lichtenau und Walburg. Notizbl. hess. L. Amt. Bodenforsch. **82** 1954 : 152–167.

18.—Carlsson, J. G. Une nouvelle espèce du genre *Crania* dans le terrain crétacé de la Suède. (Rapport préliminaire). Geol. Fören. Förhandl. **76** 3 1954 no. 478 : 351–352 3 text-figs.

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Dickins, J. M. *see* Thomas, G. A.

31.—Donovan, D. T. Upper Cretaceous Fossils from Traill and Geographical Society øer, East Greenland. Medd. Grønl. **72** 6 1954 : 1–33. (Brachiopods mentioned.)

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pods from the Itaituba formation (Pennsylvanian) of the Tapajós River, Brazil. Bull. Amer. Paleont., Ithaca **35** 149 1954 : 15–84 8 pls.

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36.—Elliott, G. F. The early lophophore and subsequent loop. (Brachiopoda). Ann. Mag. nat. Hist. (12) **7** 1954 : 729–734 pl. 16.

Fomina, E. V. *see* Samoilova, R. B.

37.—Ford, T. D. The Upper Carboniferous Rocks of the Ingleton Coalfield. Quart. J. Geol. Soc. **110** 3 : 231–265. (Brachiopods listed.)

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Frolova, N. V. *see* Pavlovski, E. V.

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51.—Harker, P., **Hutchinson,** R. D. & **McLaren,** D. J. The Sub-Devonian unconformity in the eastern Rocky Mountains of Canada from Western Canada Sedimentary Basin. Amer. Assoc. Petrol. Geol. **1954** : 48–67.

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Hutchinson, R. D. *see* Harker, P.

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61.—Knight-Jones, E. W. Relations between metachronism and the direction of ciliary beat in Metazoa. Quart. J. micr. Sci. **95** 4 1954 : 503–521 10 figs.

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Lapadu-Hargues, P. *see* Roques, M.

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McFarland, H. B. *see* Peck, J. H.

69.—Macgregor, M. in **Trueman,** A. The Coalfields of Great Britain 1954 ch. xvi. The Coalfields of Scotland. pp. 325–381. (Brachiopods mentioned.)

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McLaren, D. J. *see* Harker, P.

71.—[**Malakhova.** N. P.] [Tournaisian beds of the eastern slope of the Northern and Central Urals, and Foraminiferal study.] C.R. Acad. Sci. URSS. N.S. **99** 4 1954 : 605–608. [In Russian.] (Brachiopods mentioned.)

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73.—**Maldonado - Koerdell,** M. Otro equinoide y un braquiópodo del Cretacico medio inferior del Estado de Colima (Mexico). Ciencia Mexico **10** 7–8 1950 : 206–208 4 text-figs.

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Minato, M. *see* Hayasaka, I.

81.—**Moore,** L. R. in **Trueman,** A. The Coalfields of Great Britain. 1954 ch. vi, The South Wales coalfield, pp. 92–125. (Brachiopods mentioned.)

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84.—[**Muromtzev,** V. S.] [The age of the Ostrog series of the Kuznetsk Basin.] C.R. Acad. Sci. URSS. N.S. **95** 5 1954 : 1059–1061. [In Russian.]

85.—[**Nekhoroshev,** G. V.] [On a new finding of Middle Carboniferous fauna on the Western slopes of Dzhungarian Ala-Tau.] C.R. Acad. Sci. URSS. N.S. **96** 5 1954 : 1041–1042. [In Russian.] (Brachiopods mentioned.)

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Obruchev, D. V. *see* Graizer, M. I.

88.—**Oliver,** W. A., Jnr. Stratigraphy of the Onondaga limestone (Devonian) in central New York. Bull. geol. Soc. Amer. **65** 7 1954 621–652. (Brachiopods listed and discussed p. 648.)

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Oyama, K. *see* Yokoyama, M.

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93.—Parkinson, D. Quantitative Studies of Brachiopods from the Lower Carboniferous Reef Limestones of England 1. *Schizophoria resupinata* (Martin). J. Paleont. **28** 3 1954 : 367–381 19 figs.

94.—Parkinson, D. Quantitative Studies of Brachiopods from the Lower Carboniferous Reef Limestones of England II. *Pugnax pugnus* (Martin) and *P. pseudopugnus* n. sp. J. Paleont. **28** 5 1954 : 563–574 1 pl. 18 figs.

95.—Parkinson, D. Quantitative Studies of Brachiopods from the Lower Carboniferous Reef Limestones of England III. *Pugnax acuminatus* (J. Sowerby) and *P. mesogonus* (Phillips). J. Paleont. **28** 5 1954 : 668–678 12 figs.

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97.—Peck, J. H. Jr. & **McFarland,** H. B. Whitfield Collection types at the University of California. J. Paleont. **28** 3 1954 : 297–309 pl. 29.

98.—Pederson, S. L. A Permian (Wolfcampian) fauna of the Casper formation of south-eastern Wyoming. J. Paleont. **28** 1 1954 : 17–21 pl. ii.

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Rios, J. M. *see* Almela, A.

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117.—Schmidt, H. *Sphaerirhynchia* (*Estonirhynchia*) *estonica* n. subgen. n. sp. Senckenbergiana **35** 3–4 1954: 235–245 12 figs.

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Smirnova, R. F. *see* Samoilova, R. B.

121.—Sokolskaja, A. N. Strophomenids of the Russian Platform. Trans. Paleont. Inst. Acad. Sci. USSR. **51** 1954: 1–187 18 pls. 66 text-figs. [In Russian.]

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Taki, T. *see* Yokoyama, M.

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126.—Thomas, G. A. & **Dickins,** J. M. Discovery of Upper Devonian rocks in the Pelican Hill Bore. Aust. J. Sci. **17** 2 1954: 47–50 2 figs.

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131.—Tuzet, O. & **Sanchez,** S. Sur la présence d'un appareil parabasal dans les cellules flagellées des bras du brachiopode, *Terebratulina caputserpentis* L. C.R. Acad. Sci. Paris **238** 18 1854 : 1839–1841 3 figs.

132.—Vandercammen, A. Observations sur les croissance des Brachiopodes Spiriferidae. Vol. Jubil. Victor Van Straelen, Bruxelles **1** 1954 : 537–546 7 figs.

133.—Veselinović, D. Le Lias dans la région des "calcaires de Ravanica". La zone calcaire à l'ouest de Kučaj. Rec. Trav. Inst. Géol. Jovan Zujović Beograd. **7** 1954 : 45–52. [In Serbian, resumé in French.] (Brachiopods mentioned.)

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II.—SUBJECT INDEX.

General.—Check list of Tertiary and Pleistocene Brachiopods of Japan, HATAI **52;** Age of limestone with "*Rhynchonella*" *decorata* in Lorraine discussed, MAUBEUGE **76;** Brachiopod papers of A. Bigot listed, DANGEARD **28;** Rhynchonellid zones of Upper Devonian of N. America, McLAREN **70;** Reprint of O. A. Derby's papers on Upper Palaeozoic Brachiopods of Brazil, GONSALVES **45.**

Biometrics. — *Productus concinnus* from Russian Carboniferous, SARYCHEVA **114;** Growth variation in Productids, SARYCHEVA **111, 112;** Fossil species, GEORGE **42;** *Pugnax pugnus*, PARKINSON **94;** *Pugnax acuminatus*, PARKINSON **95;** *Schizophoria resupinata*, PARKINSON **93;** Statistical analysis of *Spirifer* (*Spinocyrtia*) *lateincisus* and subgroups SIMON **119;** Growth in Devonian Spiriferidae, VANDERCAMMEN **132;** *Atrypa reticularis* from Silurian of Worcestershire, HARDIE **50.**

Chemical Composition. — Inarticulata compared with Articulata, VINOGRADOV **135.**

Classification and Nomenclature.—Strophomenids, SOKOLSKAJA **121;** Tertiary and Pleistocene Brachiopods of Japan, HATAI **52;**

Homoeomorphy. — *Syringospira* and *Sphenospira*, COOPER **22.**

Terminology. — Relating to ciliary beat, KNIGHT-JONES **61**; new term stegidium, COOPER **22**; new terms proconical, cataconical and apsoconical for Acrotretid pedicle valve outline, PALMER **92**.

Type specimens.—Palaeozoic Brachiopods in New York State Museum, KILFOYLE **58**; Whitfield collection in University of California, PECK & MCFARLAND **97**; Lr. Palaeozoic Brachiopods in Mendoza Museum, Argentine, RUSCONI **107**.

STRUCTURE.

Internal structure of Chalk rhynchonellids, PETTITT **99**; Lias rhynchonellids, AGER **1**; *Strophalosia*, MAXWELL **77**; *Terebratulina caputserpentis*, TUZET **131**; Internal morphology and punctation, BIERNAT **11**; lophophore and loop development, ELLIOTT **36**.

Transverse Sections. — *Sulcirhynchia valangiensis* from the Neocomian of Switzerland, BURRI **16**; *Sulcirhynchia*, *Plicarostrum* and *Lamellaerhynchia* from Neocomian of Switzerland, BURRI **15**; Chalk rhynchonellids, PETTITT **99**; Liassic rhynchonellids,, AGER **1**; *Stenoscisma*, *Cleiothyridina* and *Composita* from Lr. Carboniferous, GEORGE **43**; *Camarotoechia hexatoma* from Devonian of Poland, BIERNAT **11**; *Sphaerirhynchia* and *Estonirhynchia* from Devonian of Germany, SCHMIDT **117**; *Camarotoechia* from Famennian of Belgium, SARTENAER **110**.

EVOLUTION

Middle Lias rhynchonellids, AGER **1**; *Strophalosia*, MAXWELL **77**; Strophomenids of Russia, SOKOLSKAJA, **121**; *Spirifer subcuspidatus* group SIMON **119**.

ECOLOGY

Position of growth of *Strophalosia*, MAXWELL **77**; Permian Brachiopods of Texas, reef dwellers and fixation of shell, STEHLI **122**; injury to shell of Productids during life, SARYCHEVA **113**; Lr. Carboniferous Brachiopods of Scotland, CRAIG **25**; Worm borings in Chonetids and Spiriferids and position of growth, LAMONT **64**.

PHYSIOLOGY

Ciliary beat in Brachiopods and other Metazoa, KNIGHT-JONES **61**; flagellate cells of lophophore in *Terebratulina caputserpentis*, TUZET **131**.

DISTRIBUTION

RECENT

General, ELLIOTT **36**; Gulf of Mexico, COOPER **23**.

FOSSIL

Palaeozoic. — General, PAVLOVSKI & FROLOVA **96**; SCHINDEWOLF **115**; N. Spain, DAHMER **26**; (Ur.) Kolvo-Vishersk Land, Russia, SULTANAEV **123**; (Ur.) Alai ridge, Tadzhik SSR, Central Asia, LISITZINA & BOGUSH **68**; (Ur.) Yarrol Basin, Queensland, MAXWELL **78**; Brazil, GONSALVES [DERBY] **45**.

Cambrian. — Spain, GARCÍA-FUENTE **39**; U.S.A., KILFOYLE **58**; Texas, PALMER **92**; Argentine, RUSCONI **107**.

Ordovician. — Spain, BORN **12**; Russia, ALIKHOVA **2**; SOKOLSKAJA **121**; Canada, Rocky Mts., HARKER, HUTCHINSON & MCLAREN **51**; Ontario, SINCLAIR **120**; U.S.A., KILFOYLE **58**; Argentine, RUSCONI **107**, **108**.

Silurian. — England, Worcestershire, HARDIE **50**; Herefordshire, LAWSON **65**; Russian Platform, SOKOLSKAJA **121**; Russia, GOFSHTEIN **44**; U.S.A., Pennsylvania, WIMMER **139**; U.S.A., KILFOYLE **58**.

Devonian. — General, VANDERCAMMEN **132**; (Ur.) Belgium, SARTENAER **110**; (Ur.) Ardennes, LECOMPTE **66**; France, RENAUD **103**; (Lr.) Germany, Rhineland, RÖSLER **105**, **106**; (Lr,) Taunus, DAHMER **27**; Germany, SIMON **119**; SCHMIDT **117**; Spain, GARCÍA-FUENTE **39**, **40**; ALMELA & RIOS **4**; (Middle) Poland, BIERNAT **11**; Russian Platform, GEKKER **41**; SOKOLSKAJA **121**; Russia, NOVIK **87**; Pre-Baltic, LIEPINSH

67; Turkey, TÜRKÜNAL **130**; Siberia, MATROSOV **75**; (Ur.) Japan, HAYASAKA & MINATO **53**; (Ur.) Canada, Rocky Mts., MCLAREN **70**; U.S.A., Pennsylvania, WIMMER **139**; U.S.A., KILFOYLE **58**; (Lr.) OLIVER **88**; (Ur.) New Mexico, COOPER **22**; Western Australia, THOMAS & DICKINS **126**; Queensland, MAXWELL **78**.

Carboniferous. — (Lr.) Great Britain, PARKINSON **93, 94, 95**; (Ur.) TRUEMAN **129**; (Ur.) Staffs, COPE **24**; (Ur.) Yorkshire and Nottingham, EDWARDS **34**; (Namurian) Yorkshire, FORD **37**; (Lr.) Breconshire, GEORGE **43**; (Lr.) Scotland, CRAIG **25**; REED **102**; (Ur.) MACGREGOR **69**; S. Wales, MOORE **81**; (Namurian) Lancashire, MOSELEY **82**; (Ur.) Lancashire, TROTTER **128**; (Lr.) Central France, ROQUES, LAPADU-HARGUES & BRADSHAW **104**; (Lr.) France, DERVILLE **30**; (Ur.) Belgium, CHAUDOIR **20**; (Namurian) Spain, SCHMIDT **116**; (Lr. and Ur.), GARCÍA-FUENTE **40**; ALMELA & RIOS **4**; Russian Platform, SOKOLSKAJA **121**; Moscow Basin, SAMOILOVA, SMIRNOVA & FOMINA **109**; (Lr.) Ural Mts., MALAKHOVA **71, 72**; SARYCHEVA **111, 112, 113, 114**; Kazakhstan, NEKHOROSHEV **85**; (Lr.) Siberia, GRAIZER, OBRUCHEV & SOKOLSKAJA **46**; MUROMTZEV **84**; Japan, HAYASAKA & MINATO **54**; (Lr. and Ur.), N. America, Rocky Mts., WILLIAMS **138**; (Pennsylvanian) Wyoming, BURK **14**; U.S.A., KILFOYLE **58**; (Pennsylvanian) Brazil, ALMEIDA **3**; DRESSER **32**; CASTER **19**; (Lr.) Queensland, Yarrol Basin, MAXWELL **78**; HILL **56**; Western Australia, TEICHERT **124**; New South Wales, VOISEY **134**.

Permian. — England, Durham, TRECHMANN **127**; Russian Platform, SOKOLSKAJA **121**; Montenegro, KOSTIĆ-PODGORSKA **63**; Pakistan, Salt Range, SCHINDEWOLF **115**; Manchuria, NODA **86**; Japan, HAYASAKA & MINATO **54**; Madagascar, BESAIRIE **10**; Texas, STEHLI **122**; (Lr.) Wyoming, PEDERSON **98**; MENDES **79**; S. America, BARBOSA **8**; Western Australia, TEICHERT **124**; Queensland, MAXWELL **77**; HILL, **56**; Tasmania, BANKS **7**; New South Wales, VOISEY **134**; New Zealand, MARWICK **74**.

Trias. — English Channel, Trias pebbles in Eocene, KING **60**; Germany, BUSSE **17**; Pakistan, Salt Range, SCHINDEWOLF **115**; Madagascar, BESAIRIE **10**; U.S.A., Utah, POBORSKI **100**; New Zealand, MARWICK **74**; Western Australia, BRUNNSCHWEILER **13**.

Jurassic.—(Lias) Great Britain, AGER **1**; (Ur. Lias) Yorkshire, DEAN **29**; Cornbrash, ARKELL **6**; France, DANGEARD **28**; (Lias) Italy, CONTI **21**; (Middle Lias) Lorraine, MAUBEUGE **76**; (Callovian) Germany, WETZEL **137**; Jura Mts., BARTENSTEIN & BURRI **9**; (Lias) Serbia, VESELINOVIĆ **133**; Lr.-Ur. Jurassic Roumania, RĂILEANU **101**; Ur. Jurassic Turkey, TÜRKÜNAL **130**; Western Australia, TEICHERT **124**; New Zealand, MARWICK **74**.

Cretaceous.—(Ur.) England, PETTITT **99**; (Neocomian) Switzerland, BURRI **15, 16**; Jura Mts., BARTENSTEIN & BURRI **9**; (Ur.) Sweden, HÄGG **47 49**; CARLSSON **18**; (Lr.) Serbia, ANDJELKOVIC **5**; (Albian) Roumania, IACOB **57**; Mexico, MALDONADO-KOERDELL **73**; (Ur.) E. Greenland, DONOVAN **31**; Algeria, Tunis, DROT **33**; (Ur.) Mozambique, HENRIQUES DA SILVA **55**; Zululand, MUIR-WOOD **83**.

Tertiary. — Russia, MERKLIN **80**; Japan, SHIKAMA **118**; HATAI **52**.

Eocene. — England, France, Africa, ELLIOTT **35**.

Miocene. — Mozambique, HENRIQUES DA SILVA **55**; Zululand, KING **59**; New Zealand, WELLMAN & BRODIE **136**.

Pliocene.—Greece, FREYBERG **38**; Mozambique, HENRIQUES DA SILVA **55**; Japan, OZAKI **90, 91**; TAKI & OYAMA **140**; New Zealand, TE PUNGA **125**.

Pleistocene. — Japan, OYAMA, **89**; TAKI & OYAMA **140**.

III.—SYSTEMATIC INDEX.

NOTE.—Classification at present under review but mainly according to C. Schuchert and C. M. Le Vene in Fossilium Catalogus **1** 42 Brachio-

poda 1929, and as emended by various authors.

Full references are given only in the case of new genera and species. In other cases the numeral in " Large bold Clarendon " refers to the list of titles where the full reference will be found. In the case where a reference is given in the Systematic Part the volume number is printed in " Small bold Clarendon ".

CLASS INARTICULATA

ORDER ATREMATA

OBOLACEA

CURTICIDAE

†*Dysoristus lochmanae* fig. p. 766, PALMER **92.**

OBOLIDAE

†*Delgadella* Walcott 1908 nom. nud., 1912 type *Lingulepis lusitanica* Delgado 1904 transferred to Trilobita. TEIXEIRA Bol. soc. geol. Port. **10.** 1–3 1952 : 174.

†*Leptobolus insignis* mut. *latus* holotype and paratype in New York State Museum, KILFOYLE **58** p. 278.

†*Lingulella stoneana* holotype Whitfield in Univ. California Coll., PECK & MCFARLAND **97** p. 302.; *L. martillensis* p. 86, *corralensis*, *subdivisa*, *solitariensis*, *lasherensis* p. 96, *peladensis* p. 102, *crucensis* p. 110, types in Mendoza Museum, RUSCONI **107.**

†?*Lingulepis pehuenchensis* p. 92 type in Mendoza Museum, RUSCONI **107.**

†*Obolus pirquiriensis* p. 95, *canotensis* p. 96, *jarillanus* p. 110, *lasherensis* p. 123, types in Mendoza Museum, RUSCONI **107**; *O. lamellosus* p. 214, BORN **12** ; *O. leonensis* figd. Cambrian, Spain, GARCÍA-FUENTE **39.**

†*Paterula minuta* holotype in New York State Museum, KILFOYLE **58** p. 300.

†*Westonia salagastense* p. 115 type in Mendoza Museum, RUSCONI **107.**

LINGULACEA.

LINGULIDAE

†*Glossina acer* hypotype and plastotypes in New York State Museum, KILFOYLE **58** p. 273, 274.

Glottidia pyramidata p. 363, COOPER **23.**

†*Lingula beani* p. 154, WETZEL **137**; *L. rostrum* figd. pl. 46 (figured by Yokoyama as *L. hians* Swainson), TAKI & OYAMA **140** ; *L. covingtonensis* Hall & Whitfield, plastoholotype p. 301, *elderi* syntypes and paratypes, *ligea* hypotype, *manni* hypotypes p. 302, in Univ. California Coll., PECK & MCFARLAND **97** ; *L.* cf. *subparallela* p. 92 figd., sp. p. 93 figd., LIEPINSH **67** ; *L. menneri* **sp. nov.** Middle Miocene Kazakhstan p. 157, fig. opp. p. 78, MERKLIN C.R. Acad. Sci. Moscow N.S. **95** 1 1954 ; *L. bisulcata* hypotypes p. 286, *clarkei* holotype, *eboria* holotype, *lamellata* hypotype, *lepta* cotype, *media* holotype p. 287, *philograptolitha* holotype, *quebecensis* hypotype, *rectilatera* hypotypes, *rectilateralis* topotypes p. 288, *r. major* hypotype *semina* cotypes, *spathata* hypotypes p. 289, *subtrigona* cotypes, *testatrix* cotypes, *vernoni* holotype, *vicina* holotype p. 290 in New York State Museum, KILFOYLE **58** ; *L. cretacea* from Cenomanian *constrictus* zone Sweden, HÄGG **47** ; *L.* cf. *ovata* p. 214, BORN **12** ; *L.* n. sp. a, b, recorded Trias Fitzroy Basin W. Australia, BRUNNSCHWEILER **13.**

†Linguloid type A, type B, figd. p. 767, PALMER **92.**

LINGULASMATIDAE

†*Lingulasma* (?) *elongatum* holotype in New York State Museum, KILFOYLE **58** p. 290.

TRIMERELLACEA.

TRIMERELLIDAE

†*Dinobolus canadensis* hypotype in New York State Museum, KILFOYLE **58** p. 266 ; *D. parvus* Whitfield holotype in Univ. California Coll., PECK & MCFARLAND **97** p. 301.

†*Trimerella ohioensis* hypotype in Univ. California Coll., PECK & MCFARLAND **97** p. 303.

ORDER NEOTREMATA

PATERINACEA

PATERINIDAE

†*Paterina* sp. p. 767 figd., PALMER **92.**

MICROMITRIDAE

†*Dictyonina perforata* **sp. nov.** p. 766 figd. Cambrian Texas, PALMER J. Paleont. **28** 6 1954.

†*Micromitra* (*Iphidella*) *asperoensis* p. 86, *edita* p. 92, type specimen in Mendoza Museum, RUSCONI **107**.

SIPHONOTRETACEA

OBOLELLIDAE

†*Obolella salagastiana* p. 116, type in Mendoza Museum, RUSCONI **107**.

SIPHONOTRETIDAE

†*Schizambon albaniensis* holotype in New York State Museum. KILFOYLE **58** p. 318.

ACROTRETACEA

ACROTRETIDAE

†?*Acrothele isidrensis* p. 92 type in Mendoza Museum, RUSCONI **107**.

†*Acrotreta bisecta* hypotype in New York State Museum, KILFOYLE **58** p. 230; *A. martillensis* p. 86, *salagastensis* p. 96, 101, cf. *salagastensis* p. 105, cf. *martellensis* p. 112, types in Mendoza Museum, RUSCONI **107**.

†*Angulotreta* **gen. nov.** type species *A. triangularis* **sp. nov.**, *postapicalis* **sp. nov.** p. 769, *triangularis* var. *digitalis* **var. nov.** p. 770, all figd. Cambrian Texas, PALMER J. Paleont. **28** 6 1954.

†*Apsotreta* **gen. nov.** type species *A. expansa* **sp. nov.** p. 770, *orifera* **sp. nov.** p. 771 both figd. Cambrian Texas, PALMER J. Paleont. **28** 6 1954.

†*Opisthotreta* **gen. nov.** type species *O. depressa* **sp. nov.** p. 771 figd. Cambrian Texas, PALMER J. Paleont. **28** 6 1954.

DISCINACEA

TREMATIDAE

†*Lingulodiscina* sp., figd. p. 8, BURK **14**.

†*Oxlosia accola* hypotype in New York State Museum, KILFOYLE **58** p. 299.

†*Schizobolus truncatus* hypotypes in New York State Museum, KILFOYLE **58** p.318.

†*Trematis millepunctata* hypotype in Univ. California Coll., PECK & MCFARLAND **97** p. 302; *T. crassipuncta* hypotype, *punctostriata* var. *minor* cotypes, *millepunctata* hypotype p. 342, *spinosa* holotype and paratype, *terminalis* hypotype p. 343, in New York State Museum, KILFOYLE **58**.

DISCINIDAE

†*Discina lodensis* hypotype, *meekana* Whitfield syntype, *minuta* hypotype in Univ. of California Coll., PECK & MCFARLAND **97** p. 301; *D. davidsoni* p. 194 figd., CONTI **21**; *D.* sp. figd., HÄGG **48**.

†*Oehlertella abdenensis* **sp. nov.** Lower Carboniferous Fife, Scotland, REED Proc. Leeds Phil. Soc. (sci. sect.) **6** 3 1954: 180, figd.; *O.* sp. morphotype p. 294 in New York State Museum, KILFOYLE **58**.

†*Orbiculoidea asperoensis* p. 86, *empozadense* p. 123, types in Mendoza Museum, RUSCONI **107**; *O. empozodense* p. 63 figd., RUSCONI **108**; *O.* sp. hypotype p. 294, 295, cf. *siegenensis* hypotypes p. 295, *baini* hypotype p. 295, *bertiensis* cotypes, *bodenbenderi* cotypes p. 296, *limata* cotypes, cf. *limata* onomatype, *molina* holotype, paratypes p. 297, *montis* holotype, hypotypes, *scutulum* holotype, *tenuistriata* hypotype p. 298 in New York State Museum, KILFOYLE **58**.

†*Schizotreta conica* cotypes in New York State Museum, KILFOYLE **58** p. 319.

CRANIACEA

CRANIIDAE

†*Crania carbonaria* Whitfield syntypes, *scabiosa* hypotype figd., Hall & Whitfield, in Univ. California Coll. PECK & MCFARLAND **97** p. 301; *C. ryckholtiana* figd., p. 181, REED **102**; *C. excavata* **sp. nov.** Cretaceous Sweden, CARLSSON Geol. Fören. Forhand. **76** 3 no. 478 1954: 351, figd.; *C. ignabergensis*, *retzii*, *spinulosa*, *sp.* recorded p. 260, HÄGG **49**; *C. ignabergensis* p. 60, *spinulosa* p. 61, HÄGG **48**; *C.* sp. morphotype, p. 257, *pulchella* hypotype p. 257, in New York State Museum, KILFOYLE **58**.

Crania pourtalesii p. 363, COOPER **23**.

†*Craniops* cf. *ovata* hypotype in New York State Museum, KILFOYLE **58** p. 258.

†*Petrocrania* (?) *grandegrevensis* holotype in New York State Museum, KILFOYLE **58** p. 300.

†*Philhedra laelia* hypotypes in New York State Museum, KILFOYLE **58** p. 300–301.

CLASS ARTICULATA

ORTHOIDEA

ORTHACEA

NISUSIIDAE

†*Nisusia vaticina* figd. Cambrian Spain, GARCÍA-FUENTE **39**.

BILLINGSELLIDAE

†*Billingsella* sp. figd., PALMER **92**.

†*Diraphora* ? sp. p. 772 figd., PALMER **92**.

EOORTHIDAE

†*Eoorthis crucensis* p. 110, (?) *asimetricus*, *salagastensis* p. 116, (?) *empozadensis*, *canterensis*, *pehuenchensis* p. 123, types in Mendoza Museum, RUSCONI **107**; ?*E. empozadensis* p. 64, *pehuenchensis*, *canterensis* p. 65, all figd., RUSCONI **108**.

†*Orusia* ? *cuyana* p. 86, 116, *lasheriana* p. 116, types in Mendoza Museum, RUSCONI **107**.

†*Otusia salagastiana* p. 116 type in Mendoza Museum, RUSCONI **107**.

ORTHIDAE

†*Apatorthis* genus discussed p. 67, *tenuicostata* p. 68 figd., ALIKHOVA **2**.

†*Boreadorthis* p. 39, *sadewitziensis* p. 40, *crassa* p. 41, *recula* var. *aequivalvata* p. 42 all figd., ALIKHOVA **2**.

†*Cyrtonotella kuckersiana kuckersiana* figd. p. 32, *k. frechi* p. 36 figd., ALIKHOVA **2**.

†*Glyptorthis crispata* hypotypes in New York State Museum, KILFOYLE **58** p. 274.

†*Nicolella oswaldi* form. *typica* p. 37, *o.* var. *mediofida* p. 38, aff. *oswaldi* p. 39 all figd., ALIKHOVA **2**.

†*Orthis* sp. p. 111, *mendozaensis* p. 117, types in Mendoza Museum, RUSCONI **107**; *O.* sp. hypotype in New York State Museum, KILFOYLE **58** p. 298; *O. callactis* p. 28, *calligramma* p. 30, figd., ALIKHOVA **2**; *O. circularis* figd. pl. 7, p. 43, TÜRKÜNAL **130**; *O. michelini* figd. Lr. Carboniferous Spain, GARCÍA-FUENTE **40**; *O. provulvaria* p. 112 figd., DAHMER **26**; *O. ribeiroi* figd. p. 214 *calligramma*, var. *alata* figd. p. 216, BORN **12**.

†*Paurorthis* genus discussed p. 64, *parva* p. 65 figd., ALIKHOVA **2**.

†?*Productorthis huentotensis*, *canterensis* p. 117, types in Mendoza Museum, RUSCONI **107**; *P.* p. 43, *obtusa* form *typica* p. 44, *o.* var. *paralella* p. 46 all figd., ALIKHOVA **2**.

DINORTHIDAE

†*Austinella* sp. cf. *whitfieldi* hypotype, p. 233 in New York State Museum, KILFOYLE **58**.

†*Dinorthis* p. 47 genus discussed, ALIKHOVA **2**.

†*Dinorthis* (*Plaesiomys*) cf. *porcata* hypotype in New York State Museum, KILFOYLE **58** p. 266.

†*Dinorthis* (*Retrorsirostra*) *retrorsa* hypotypes in New York State Museum, KILFOYLE **58** p. 266.

†*Plaesiomys* sub-genus of *Dinorthis* discussed p. 48, *D.* (*P.*) *solaris* p. 49 figd., ALIKHOVA **2**.

FINKELNBURGIIDAE

†?*Finkelnburgia salagastiana* p. 117, type in Mendoza Museum, RUSCONI **107**.

PLECTORTHIDAE

†*Hebertella salagastensis* p. 117, type in Mendoza Museum, RUSCONI **107**.

†*Orthostrophia canadensis* cotype in New York State Museum, KILFOYLE **58** p. 299.

†*Platystrophia chama* p. 24 figd., *lynx lynx* figd. p. 25, *lutkevichi* p.25 figd., ALIKHOVA **2**.

†*Plectorthis empozadensis* p. 108 *huarpeanus*, *bicostatus* types in Mendoza Museum, RUSCONI **107**.

LYCOPHORIIDAE

†*Lycophoria* genus discussed, *nucella* figd. p. 52, *globosa* figd. p. 53, ALIKHOVA **2**.

DALMANELLOIDEA
DALMANELLACEA

DALMANELLIDAE

†*Dalmanella* sp. cf. *concinna* hypotypes, *drevermanni* cotype and hypotype p. 263, *fultonensis* mut. *lorrainensis* holotype, mut. *rotunda* cotypes p. 263, *penouili* cotype p. 264, *testudinaria* hypotypes p. 264, 265, in New York State Museum, KILFOYLE **58**; *D.* genus discussed, *navis* p. 55 figd., *kegelensis* **sp. nov.** p. 57 figd., *wesenbergensis* p. 60 figd., aff. *wesenbergensis* p. 61 figd., *estona* p. 62 figd., Ordovician Russia, ALIKHOVA **2**; *D. empozadense* p. 124, type in Mendoza Museum, RUSCONI **107**; *D. empozadense* p. 67, RUSCONI **108**; *D. budleighensis* p. 217, BORN **12**.

†*Parmorthis* cf. *elegantula* hypotype in New York State Museum, KILFOYLE **58** p. 300.

†*Resserella multisecta* hypotypes in New York State Museum, KILFOYLE **58** p. 313.

ONNIELLIDAE

†*Australina jachalensis* cotypes and plastotypes p. 233 in New York State Museum, KILFOYLE **58**.

RHIPIDOMELLIDAE

†*Platyorthis* cf. *circularis* p. 301, 302 hypotypes, *lucia* hypotypes p. 302, in New York State Museum, KILFOYLE **58**; *P. opercularis* p. 493 figd., interior dorsal valve figd. p. 494, punctation p. 495, BIERNAT **11**.

†*Rhipidomella* cf. *arkansana* figd., Namurian Spain, SCHMIDT **116** pl. ii; *R. hybridoides* p. 314 holotype and hypotypes, *lehuquetiana* cotypes and hypotypes, *logani* cotypes and hypotypes p. 315, *musculosa* hypotypes p. 316, *m.* var. *solaris* cotypes, *mimus* hypotypes p. 317, in New York State Museum, KILFOYLE **58**; *R.* genus diagnosed p. 290, *hessensis* p. 291 figd., STEHLI **122**; *R. subcordiformis* p. 492 figd., punctation p. 493, BIERNAT **11**; *R.* genus discussed *penniana* p. 21 figd., DRESSER **32**. *Orthis* (*R.*) *michelini* var. *divaricata*, *lyelliana*, p. 181 figd., REED **102**.

SCHIZOPHORIIDAE

†*Enteletes* discussed and figd. p. 294, *dumblei* p. 295 figd., STEHLI **122**.

†Enteletinae subfamily diagnosed, artificial key to genera p. 294, STEHLI **122**.

†*Orthotichia* genus discussed p. 23, *morganiana* p. 24 figd., DRESSER **32**; *O.* genus diagnosed p. 292, *hueconiana* p. 293, STEHLI **122**.

†?*Pionodema cuyana* p. 124, type in Mendoza Museum, RUSCONI **107**; ?P. *cuyana* p. 66 figd., RUSCONI **108**.

†*Schizophoria resupinata* neotype figd. statistical methods employed in comparing populations p. 368, PARKINSON **93**; *S. vulvaria* p. 132, RENAUD **103**; *S.* (?) *amii* holotype and hypotype in New York State Museum, KILFOYLE **58** p. 319; *S.* genus discussed, aff. *resupinata* p. 29 figd., cf. *resupinata* var. *lata* p. 31 figd., MAXWELL **78**; *S. interstrialis* **sp. nov.** p. 496, 148, punctation or interior dorsal valve figd. p. 497, 148, 498, Devonian Couvinnian, Poland, BIERNAT Acta Geol. Polon. Warszawa **4** 1954; *S. resupinata* p. 57, figd. Lr. Carboniferous Spain, GARCÍA-FUENTE **40**.

†Schizophoriidae diagnosed, MAXWELL **78** p. 29

†Schizophoriinae diagnosed, MAXWELL **78** p. 29.

CLITAMBONITOIDEA
CLITAMBONITACEA

CLITAMBONITIDAE

†*Antigonambonites* genus discussed, *planus* form. typica p. 93, *p.* var. *costatus* p. 96, *p.* var. *anna* p. 97, all figd., ALIKHOVA **2**.

†*Clinambon* genus discussed p. 87, *anomalus* p. 88 figd., ALIKHOVA **2**.

†*Clitambonites* genus discussed p. 69, *adscendens* p. 70 figd., *squamatus* p. 72 figd., *schmidti schmidti* p. 74 figd., *S. epigonus* p. 77 figd., ALIKHOVA **2**.

†*Ilmarinia* genus discussed, *dimorpha* figd. p. 86, ALIKHOVA **2**.

†*Vellamo ruedemanni* cotypes in New York State Museum, KILFOYLE **58** p. 345; *V.* genus discussed p. 78, *praeemarginata* **sp. nov.** p. 79 figd., *emarginata* figd. p. 80, *wesenbergensis* p. 82, *verneuili* p. 84 figd., ALIKHOVA **2**.

ESTLANDIIDAE

†*Estlandia* genus discussed p. 98, *pyron pyron* p. 99, *p. silicificata* p. 101, figd., *marginata* p. 103 figd., ALIKHOVA **2**.

KULLERVOIDAE

†*Kullervo* genus discussed p. 105, *panderi* figd. p. 106, ALIKHOVA **2**.

SYNTROPHIOIDEA
SYNTROPHIACEA

TETRALOBULIDAE

†*Calliglypha costellata* p. 118 type in Mendoza Museum, RUSCONI **107**.

CLARKELLIDAE

†*Syntrophina huarpeana* p. 117, type in Mendoza Museum, RUSCONI **107**.

PENTAMEROIDEA
PENTAMERACEA

PENTAMERIDAE

†*Pentamerus oblongus*, hypotype, *pergibbosus*, holotype, *pes-ovis* syntypes in Univ. California Coll., PECK & MCFARLAND **97** p. 302.

†*Sieberella sieberi* var. *rectifrons* p. 133 figd., RENAUD **103**.

TRIPLESIOIDEA
TRIPLESIACEA

TRIPLESIIDAE

†*Triplesia nucleus* hypotype p. 343 in New York State Museum, KILFOYLE **58**; *T. ortoni* hypotype in Univ. California Coll., PECK & MCFARLAND **97** p. 303.

STROPHOMENOIDEA
PLECTAMBONITACEA

PLECTAMBONITIDAE

†*Leptelloidea* genus discussed p. 110, *leptelloides* p. 111 figd., ALIKHOVA **2**,

†*Plectambonites* cf. *sericeus* p. 217, BORN **12**; *P. centricarinatus* holotype p. 303 in New York State Museum, KILFOYLE **58**.

LEPTESTIIDAE

†*Leptestia* genus discussed, *musculosa* p. 109 figd., ALIKHOVA **2**.

†*Sowerbyella rugosa* hypotypes, *sericea* hypotype, *s.* var. *jugata* cotypes p. 323, in New York State Museum, KILFOYLE **58**.

STROPHOMENOIDEA
STROPHOMENACEA

STROPHOMENIDAE

†*Actinomena* genus described p. 76, internal characters figd. p. 77, *orta* p. 78, SOKOLSKAJA **121**.

†*Gaspesia aurelia* hypoplastotypes in New York State Museum, KILFOYLE **58**.

†*Leptaena* cf. *rhomboidalis* p. 499 figd., hinge figd. p. 499, BIERNAT **11**; *L. argentina* hypotypes p. 277, *rhomboidalis* hypotypes, *r.* var. *ventricosa* hypotype p. 277, in New York State Museum, KILFOYLE **58**; *L.* genus diagnosed p. 32, cf. *analoga* p. 33 figd., MAXWELL **78**; *L. isidreana*, *cuyana* p. 124 types in Mendoza Museum, RUSCONI **107**; *L. isidreana* p. 66 figd., *cuyana* p. 67 figd., RUSCONI **108**; *L.* described in Russian p. 53, internal characters figured p. 54, *trigonalis* p. 54, *rugosa* p. 56, *luhi* **sp. nov.** p. 57, *schmidti* p. 59, *acuta plicata* [**sp. nov.**] Schmidt 1908 nom. nud. diagnosed and described, p. 60, *depressa* p. 62, all figured, SOKOLSKAJA Trav. Paleont. Inst. Acad. Sci. URSS. **51** 1954.

†*Leptaenella* described in Russian p. 64, internal characters figured p. 65, *analoga* p. 65, SOKOLSKAJA **121**.

†*Öpikina* genus discussed, *dorsata dorsata* p. 112 figd., *d. assakkini* figd. p. 114, *anijana anijana* p. 115 figd., *anijana grandis* **subsp. nov.** p. 115 Ordovician Russia, ALIKHOVA **2**.

†*Öpikina* described in Russian, p. 46, internal characters figured p. 47, *imbrex* p. 48, *dorsata* p. 49, *imbrexoidea* **sp. nov.** p. 51 Ordovician

Tallin, SOKOLSKAJA Trans. Paleont. Inst. Acad. Sci. URSS. **51** 1954.

†*Playfairia* subgen. *Rafinesquina* emended p, 42, *deltoidea* p. 43 figd., SOKOLSKAJA **121.**

†*Pseudoleptaena* described in Russian p. 68, internal characters figured p. 69, *distorta* p. 70 figd., SOKOLSKAJA **121.**

†*Rafinesquina* described in Russian, p. 34, internal characters figd. p. 34, 35, *deltoidea*, *corrugatella* p. 38, *poljensis* p. 37, *compressa* p. 40, *expansa* p. 39, all figured, SOKOLSKAJA **121**; *R. alternata* mut. *centistriata* cotypes p. 310, *mucronata* hypotypes, *ulrichi* hypotype p. 311 in New York State Museum, KILFOYLE **58.**

Rafineskina [err. pro *Rafinesquina*] ?*portezuelensis* p. 86, 116 type in Mendoza Museum, RUSCONI **107.**

†Rafinesquininae diagnosed, MAXWELL **78** p. 32.

†*Strophomena hoeferi* cotypes, cf. *planumbona* hypotype p. 339 in New York State Museum, KILFOYLE **58**; *S. patenta* hypotype in Univ. California Coll., PECK & MCFARLAND **97** p. 302; *S.* genus described in Russian p. 80, internal characters figd. p. 82, *asmusi* p. 83, interior brachial valve figd. p. 84, *pseudodeltoidea* p. 85, *lindströmi* p. 88, SOKOLSKAJA **121.**

STROPHEODONTIDAE

†*Australostrophia mesembria* cotypes in New York State Museum, KILFOYLE **58** p. 236, 237.

†*Brachyprion fascifer* hypotypes p. 238, *major* hypotypes p. 238, 239, *schuchertanum* hypotypes p. 239 in New York State Museum, KILFOYLE **58.**

†*Cymostrophia patersoni* protype *bonamica* hypotypes, p. 259, *p.* protype *praecedens* cotypes and hypotypes p. 259, 260 in New York State Museum, KILFOYLE **58.**

†*Douvillina interstrialis* p. 505 figd., BIERNAT **11**; *D. interstrialis* var. p. 136 figd., RENAUD **103.**

†*Leptostrophia concinna* hypotypes p. 281, *irene* hypotypes, *magnifica* hypotypes p. 282, 283, *m.* var. *tullia* hypotypes p. 284, *oriskania* hypotypes p. 284–286, *tardifi* cotype, hypotype p. 286 in New York State Museum, KILFOYLE **58.**

†*Pholidostrophia lepis polonica* **subsp. nov.** p. 503, 149 figd., interior dorsal valve fig. 9 p. 503, cf. *subtetragona* figd. p. 505 Devonian, Couvinian Poland, BIERNAT Acta Geol. Polon. Warszawa **4** 1954.

†*Protoleptostrophia blainvilli* p. 309 hypotypes in New York State Museum, KILFOYLE **58.**

†*Stropheodonta* cf. *murchisoni*, cf. *sedgwicki* p. 133, cf. *verneuili* p. 136, RENAUD **103**; *S. taeniolata* p. 31 figd., cf. *taeniolata* p. 33 figd., RÖSLER **106**; *S. crebristriata* protype, *simplex* holotype, *galatea* hypotype p. 335, *hunti* cotypes and hypotypes, *lincklaeni* hypotypes, *magniventer* hypotypes, *parva* protype, *avita* hypotypes p. 337, *rosieri* cotypes, *varistriata* hypotypes p. 338, KILFOYLE **58.**

†*Strophonella ampla* hypotype p. 339, *leavenworthana* hypotype, *punctulifera* hypotypes p. 342 in New York State Museum, KILFOYLE **58.**

†*Strophonella* (*Amphistrophia*) *continens* cotypes p. 340, *c.* var. *equalis* plastotype p. 341, *c.* var. *equiplicata* holotype, *c.* var. *senilis* holotype p. 341, in New York State Museum, KILFOYLE **58.**

CHRISTIANIDAE

†*Christiania* genus defined in Russian, p. 731, *oblonga* p. 74, SOKOLSKAJA **121.**

ORTHOTETACEA.

†Orthotetacea superfamily discussed, STEHLI **122** p. 296.

SCHUCHERTELLIDAE

†*Fardenia* genus described in Russian p. 90, *pecten* p. 90, SOKOLSKAJA **121.**

†*Derbyia* genus discussed p. 29 *correanus* p. 30 figd., DRESSER **32**; *D.* (?) *subaequalis* **sp. nov.** p. 185 figd., Lower Carboniferous Fife, Scotland, REED Proc. Leeds Phil. Soc. (sci. sect.) **6** 3 1954; *D.* genus discussed, *crenulata* p. 301, figd., STEHLI **122.**

†*Derbyina* sp. ? hypotype, *jamesiana* hypotype p. 265, in New York State Museum, KILFOYLE **58.**

†Derbyinae **subfam. nov.** of Schuchertellidae, STEHLI **122** p. 300.

†*Diplanus* **gen. nov.** type species *Streptorhynchus lamellatum* King p. 299, 300 figd. Permian Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Hipparionyx minor* cotypes p. 275, *proximus* hypotypes p. 276 in New York State Museum. KILFOYLE **58.**

†*Schuchertella* genus described in Russian p. 92, interior figured p. 93, *devonica* p. 96, *donica*, *koscharica* p. 97, *matyrica* p. 98, *planiuscula* p. 101, *semenowi* p. 104, *portlockiana* p. 105, *wexfordensis* p. 106, *radialis* p. 108, *rovnensis* p. 111 all figd., SOKOLSKAJA **121**; *S.* cf. *matyrica*, sp. p. 93 figd., LIEPINSH **67**; *S.* sp. hypotypes, *becraftensis* hypotypes p. 320, *chemungensis* morphotype, cf. *chemungensis* morphotypes, *deformis* hypotypes p. 321, *sulivani* hypotypes, *woolworthana* mut. *gaspensis* cotypes p. 322 in New York State Museum, KILFOYLE **58**; *S. fascifera*, *f.* var. *scotica* **var. nov.**, *strepitans* **sp. nov.** p. 184, *collina* **sp. nov.** p. 185 figd., Lower Carboniferous Fife, Scotland, Reed Proc. Leeds Phil Soc.(sci. sect.) **6** 3 1954; *S.* genus discussed, *permiana* **sp. nov.** p. 298 figd. Permian Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **115** 3 1954.

†Schuchertellidae **fam. nov.** p. 297 with subfamily Schuchertellinae emend. p. 298, Streptorhynchinae **subfam. nov.** p. 299, Derbyinae **subfam. nov.** p. 300. STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†Streptorhynchinae **subfam. nov.** of Schuchertellidae, STEHLI **122** p. 299.

†*Streptorhynchus* genus discussed, *hallianus* p. 27 figd., DRESSER **32**; *S.* genus described in Russian, p. 168, internal characters figd. p. 169, *mjatschkowensis* p. 170. figd., SOKOLSKAJA **121**; *S. crenistria* figd. Devonian Spain, GARCÍA-FUENTE **39**; *S. crenistria* p. 56 figd., Devonian Spain, GARCÍA-FUENTE **40.**

†*Tapajotia* **gen. nov.** type species *Streptorhynchus tapajotensis* Derby, 1874, p. 33, 34 figd. p. 36, Pennsylvanian Brazil, DRESSER Bull. Amer. Paleont. Ithaca **35** 149 1954.

ORTHOTETIDAE

†*Carlopsina* **subgen. nov.** of *Schellwienella*, type species *Spirifera radialis* Phillips 1836, *radialis* var. *decorata* **var. nov.**, *radialiformis* p. 183 figd., Lower Carboniferous Fife, Scotland, REED Proc. Leeds Phil. Soc. (sci. sect.) **6** 3 1954.

†Davidsoniinae defined in Russian, SOKOLSKAJA **121** p. 73.

†*Leptaenisca concava* hypotypes in New York State Museum, KILFOYLE **58** p. 278.

†*Meekella attenuata* p. 20 figd., PEDERSON **98**; M. described in Russian p. 152, external and internal characters figd. p. 153, 154, *olivieriana* p. 155, *thomasi* p. 156, *eximia* p. 157, *venusta* p. 161, *uralica* p. 163, *recta* p. 165, *uncitoides* p. 167, SOKOLSKAJA **121**; *M.* genus discussed p. 303 figd., *hessensis* p. 305 figd., STEHLI **122.**

†Meekellinae **subfam. nov.** of Orthotetinae p. 303, STEHLI **122.**

†*Orthotetella* genus discussed p. 302, *wolfcampensis* p. 303, STEHLI **122.**

†*Orthotetes* ? sp. figd., p. 9, BURK **14**; *O.* described in Russian p. 136, internal characters figd. p. 137, 138, 140, *hindi* p. 141, *cardiformis* p. 143, *radiata* p. 145, *regularis* p. 148, *plana* p. 149, all figd., SOKOLSKAJA **121.**

Orthotetidae diagnosed p. 302 STEHLI **122.**

†Orthotetinae diagnosed p. 302 STEHLI **122**; Orthotetinae subfamily described p. 75 with genera *Actinomena*, *Strophomena*, *Schellwienella*, *Orthotetes*, *Schuchertella*, *Streptorhynchus*, *Meekella*, *Fardenia*, SOKOLSKAJA **121.**

†*Pulsia* described in Russian p. 130, internal characters figd. p. 131, 134, 135, *janischewskii* p. 132, *mosquensis* p. 133, SOKOLSKAJA **121.**

†*Schellwienella umbraculum minor* **subsp. nov.** p. 500 figd., 148, cf. *major* p. 502, Devonian, Couvinian,

Poland, BIERNAT Acta Geol. Polon. Warszawa **4** 1954.; *S. sibirica* **sp. nov.** SOKOLSKAJA in GRAIZER, OBRUCHEV & SOKOLSKAJA Lower Carboniferous Minussinsk, Siberia, C.R. Acad. Sci. Moscow N.S. **98** 5 1954 p. 826; *S.* genus described in Russian p. 112, internal characters figd. p. 113, *S.* (*S.*) *burlingtonensis* p. 115 figd., *reprinki* p. 118, *rotundata* p. 121, *crenistria* p. 124, *tatianae* p. 126, *protvensis* p. 128 all figd., SOKOLSKAJA **121**; *S. crenistria* var. *sparsiradiata* **var. nov.** Lower Carboniferous Fife, Scotland, REED Proc. Leeds Phil. Soc. (sci. sect.) **6** 3 1954; 182; *S. regularis* distribution, NODA **86** p. 102.

†*Schellwienella* (*Carlopsina*) **subgen. nov.** see under *Carlopsina*.

PRODUCTOIDEA

PRODUCTACEA

Classification under review.

†*Alexenia* genus discussed, (?) *parvispinosa* **sp. nov.** p. 325, Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Antiquatonia besputaensis* **sp. nov.** Lower Carboniferous Moscow Basin, SARYCHEVA Izvest. Acad. Sci. USSR. (ser. biol.) **2** 1948: 205; *A. hindi* figd. pl. i, shell showing damage during life, SARYCHEVA **113**; *A. costata*, *hindi*, p. 256 figd., SARYCHEVA **111**; *A.* genus discussed p. 316, *planumbona* **sp. nov.** p. 316 figd., Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Avonia* genus discussed p. 22, *kennedyensis* **sp. nov.** p. 23 figd., aff. *kennedyensis* **sp. nov.** p. 33 figd., Lower Carboniferous Tournaisian Queensland, MAXWELL Univ. Queensland Dept. Geol. **4** 5 1954.

†*Cancrinella boonensis* p. 10 figd., BURK **14**; *C.* genus discussed p. 320, *altissima* p. 321, STEHLI **122**.

†*Chonetipustula* cf. *membranacea* p. 94 figd., LIEPINSH **67**; *C. plicata*, *concentrica* figd. Spain, SCHMIDT **116** pl. ii.

†Dictyoclostidae **fam. nov.** with Linoproductinae **subfam. nov.** p. 319 and Marginiferinae **subfam. nov.** p. 321, Dictyoclostinae **subfam. nov.** for genera *Dictyoclostus*, *Antiquatonia*, *Pugilis*, *Chaoiella*, *Nudauris* **gen. nov.** and *Spinifrons* **gen. nov.** p. 316, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Dictyoclostus portlockianus* figd. p. 9, BURK **14**; *D. pinguis* var. *munda* figd. p. 283 shell showing damage during life, SARYCHEVA **113**; *D. rossicus* **sp. nov.** p. 239, *subscoticus* **sp. nov.** p. 240, *pugilis* var. p. 240, aff. *sulcatus* figd. pl. opp. p. 256, Lower Carboniferous Moscow Basin, SARYCHEVA Izvest. Acad. Sci. USSR. (Biol. Ser.) **2** 1948; *D. americanus* p. 20 figd., PEDERSON **98**.

†Echinoconchidae **fam. nov.** with genera *Echinoconchus*, *Juresania*, *Pustula*, *Waagenoconcha*, *Overtonia*, *Ramavectus* **gen. nov.** p. 326, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Gigantella striato-sulcata* p. 284 figd., shell showing damage during life, SARYCHEVA **113**.

†*Juresania nebrascensis* p. 20 figd., PEDERSON **98**.

†*Kozlowskia* genus discussed p. 321, *kingi* **sp. nov.** p. 322 figd., Permian Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Limbella* **gen. nov.** type species *Aulosteges wolfcampensis* King 1930, *victorioensis* **sp. nov.** p. 329 figd. Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†Linoproductinae **subfam. nov.** of Dictyoclostidae **fam. nov.** p. 319, STEHLI **122**.

†*Linoproductus prattenianus* p. 9 figd., BURK **14**; *L. koninckianus* p. 102 distribution, NODA **86**; *L.* genus discussed p. 319, *philocrinus* **sp. nov.** p. 319, Permian W. Texas STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Marginifera muricatina* p. 10 figd., sp. p. 11, BURK **14**; *M. haydenensis* p. 21 figd., PEDERSON **98**; *M. pusilla* distribution p. 102, NODA **86**.

†Marginiferinae **subfam. nov.** of Dictyoclostidae **fam. nov.** p. 321, STEHLI **122**.

†*Nudauris* **gen. nov.** type species *N. diabloensis* **sp. nov.** p. 317 figd., Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Overtonia* genus discussed p. 326 *plummeri* p. 327, STEHLI **122.**

†*Plicatifera baltica* **sp. nov.** Devonian, Famennian Latvia, LIEPINSH Latv. P.S.R. Zinat. Akad. Vestis **12** 89 1954 p. 96.

†Productacea superfamily discussed p. 315, STEHLI **122.**

†*Productella* sp. morphotype, *bialveata* hypotype, cf. *lachrymosa* morphotypes, *l.* var. *lima* hypotype in New York State Museum, KILFOYLE **58**; *P.* genus diagnosed, p. 8, cf. *lachrymosa* p. 9 figd., sp. p. 14, MAXWELL **78**; *P.* cf. *subaculeata, inflexa* **sp. nov.** p. 95 figd., sp. p. 96 figd. Devonian Famennian Latvia, Latv. P.S.R. Zinat. Akad. Vestis **12** 89 1954.

†*Productus auriculispinus* holotype, *dawsoni* holotype p. 307, *d.* var. *acadicus* holotype, *doubleti* holotype, *prouti* holotype, *tenuicostiformis* cotypes p. 308, in New York State Museum, KILFOYLE **58**; *P.* sp. figd. Lower Carboniferous Spain, GARCÍA-FUENTE **40**; *P. taiyuanfuensis* p. 101, *gruenewaldti* p. 102 distribution discussed, NODA **86**; *P. concinnus* figd. opp. p. 256, SARYCHEVA **111**; *P.* cf. *minutus* p. 34 figd., MAXWELL **78**; *P. semireticulatus* pl. vii, *striatus* figd. pl. viii, p. 43, TÜRKÜNAL **130.**

†*Productus* (*Avonia*) cf. *davidsoni* figd. p. 186, REED **102.**

†*Productus* (*Eomarginifera*) aff. *frechi* figd. Namurian Spain pl. 2, SCHMIDT **116**; *P.* (*E.*) *praecursor* figd. p. 186, REED **102.**

†*Psilonotus* **gen. nov.** type species *P. transversalis* **sp. nov.** p. 323, 324, *minimus* **sp. nov.** p. 324 Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Ramavectus* **gen. nov.** type species *R. diabloensis* **sp. nov.** p. 327, 328 Permian W. Texas STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Spinifrons* **gen. nov.** type species *S. quadratus* **sp. nov.** p. 318 Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Waagenoconcha purdoni* distribution discussed, NODA **86** p. 101.

SCACCHINELLIDAE

†*Scacchinella* genus discussed p. 333 figd., *americana* **sp. nov.** p. 334 Permian W. Texas STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Scacchinellidae* family discussed transferred from Orthotetacea to Productacea, STEHLI **122** p. 333.

STROPHALOSIIDAE

†*Heteralosia* genus discussed, sp. p. 328 figd., STEHLI **122.**

†*Strophalosia nebraskensiformis* cotypes in New York State Museum, KILFOYLE **58** p. 334; *S.* genus discussed p. 538, *preovalis* **sp. nov.** p. 542, var. *pristina* **var. nov.**, var. *warwicki* **var. nov.** p. 543, *brittoni* **sp. nov.** p. 543, var. *gattoni* **var. nov.** p. 544, *typica* (formerly *Branxtonia*) p. 545, *clarkei* p. 546, var. *minima* **var. nov.** p. 547, *ovalis* **sp. nov.** p. 548, *jukesi* p. 550, 556, var. *concava* **var. nov.** p. 551, variation and relation to function p. 551, articulation p. 552 shell contour p. 554, outline, phylogenetic changes p. 555, Permian Queensland, MAXWELL J. Paleont. **28** 5 1954.

†Strophalosiidae **fam. nov.** p. 328 with genera *Strophalosia, Heteralosia, Limbella* **gen. nov.**, STEHLI **122** p. 328.

†Strophalosiidae **fam. nov.** with subfamilies Productellinae and Strophalosiinae, MAXWELL **78** p. 22.

†Strophalosiidae emended with Productellinae emend. and Strophalosiinae emend., MAXWELL **77** p. 538.

RICHTHOFENACEA

RICHTHOFENIDAE

†*Planispina* **gen. nov.** type species *P. conida* **sp. nov.** p. 331, 332 Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Prorichthofenia* genus discussed, sp. p. 332, STEHLI **122.**

†Richthofenidae discussed, STEHLI **122** p. 330.

†*Teguliferina* genus discussed, (?) *teguliferoides* p. 330 figd., STEHLI **122.**

OLDHAMINOIDEA

OLDHAMINACEA

Oldhaminidae

†*Leptodus* genus discussed p. 306, (?) *diabloensis* **sp. nov.** p. 307 figd., (?) *marshalli* **sp. nov.** p. 308 figd., Permian W. Texas, Stehli Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†Oldhaminidae family discussed p. 305, Stehli **122.**

Poikilosakidae

†*Poikilosakos* genus discussed *petaloides* ? p. 306 figd., Stehli **122.**

CHONETOIDEA

CHONETACEA

Chonetidae

†*Anoplia nucleata* hypotypes in New York State Museum, Kilfoyle **58** p. 231, 232.

†Chonetacea superfamily discussed p. 308, Stehli **122.**

†*Chonetes* cf. *sarcinulata* p. 507 figd., *subquadratus* p. 508 figd., Biernat **11** ; *C. aroostookensis* cotype hypotypes p. 243, *billingsi* hypotypes p. 244, 245, *canadensis* hypotypes p. 245, *freitasi* hypotypes, *hallei* holotype, *highlandensis* cotype and coplastotypes p. 248, 249, *impensus* holotype p. 249, *melonicus* cotypes p. 250, *paucistria* holotype p. 251, *skottsbergi* cotypes p. 251, in New York State Mus., Kilfoyle **58** ; *C. dalmanianus* bored by parasitic worm, Lamont **64** p. 190 ; *C. longispinus* figd., Schmidt **116** pl. 2 ; *C.* sp. ind. p. 20 figd., Pederson **98** ; *C. reversa* Whitfield holotype, *scitula* Hall hypotype figd. Whitfield in Univ. California Coll., Peck & McFarland **97** p. 301 ; *C. latesinuata*, *pygmaea* p. 100, *substrophomenoides* p. 101 distribution discussed, Noda **86.**

†*Chonetes* (*Chonetes*) *laguessianus* p. 186 figd., *dalmanianus* p. 187 figd., Reed **102.**

†*Chonetinella* genus discussed p. 313, *victoriana* p. 314 figd., *biplicata* p. 315 figd., Stehli **122.**

†*Chonostrophia complanata* hypotypes p. 252, *dawsoni* hypotypes p. 253, 254, in New York State Museum, Kilfoyle **58.**

†*Dyoros* **gen. nov.** type species *Chonetes consanguineus* Girty 1929, (?) *magnus* **sp. nov.** p. 312 figd. Permian W. Texas, Stehli Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Eodevonaria antiopa* hypotypes, *arcuata* hypotypes p. 268, 269, *hudsonica* hypotypes p. 269, *h.* metatype *gaspensis* cotype and plastotypes, p. 270, *melonica* hypotype p. 270 in New York State Museum, Kilfoyle **58** ; *E. dilatata* p. 137, Renaud **103.**

†*Lissochonetes* genus discussed p. 310, *sinesulcus* **sp. nov.** p. 311 figd. Permian W. Texas, Stehli Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Megachonetes* genus discussed, *tenuistriatus* **sp. nov.** p. 21 figd., text-figs. p. 21, Lower Carboniferous Tournaisian Queensland. Maxwell Univ. Queensland Dept. Geol. **4** 5 1954.

†*Quadrochonetes* **gen. nov.** type species, *Q. girtyi* **sp. nov.** Permian W. Texas, Stehli Bull. Amer. Mus. Nat. Hist. **105** 3 1954 p. 310 figd.

†*Rugosochonetes* genus discussed p. 19, *kennedyensis* **sp. nov.** p. 20 Lower Carboniferous Tournaisian ; sp., *kennedyensis* var. *magnus* **var. nov.** p. 44, Lower Carboniferous Visean, Queensland, Maxwell Univ. Queensland, Dept. Geol. **4** 5 1954.

Incertae Sedis

THECIDEACEA

†*Thecidium* sp. recorded p. 260, Hägg **49.**

†*Thecidium digitatum*, *vermiculare*, Hägg **48.**

RHYNCHONELLOIDEA

RHYNCHONELLACEA

Camarotoechiidae

†*Calvinaria* (?) *inelegans* **sp. nov.** Upper Devonian Canadian Rocky Mts., McClaren West. Canada Sedim. Basin, Amer. Assoc. Petrol. Geol. **1954** : p. 178, figd.

†*Camarotoechia hexatoma* p. 509 figd., serial sections p. 510, 511, Biernat **11** ; *C.* sp. p. 209 figd., Hayasaka & Minato **53** ; *C.* sp.

hypotype, *allegania* morphotype p. 240, *contracta* morphotypes p. 241, cf. *contracta* morphotype, *dryope* hypotypes p. 241, cf. *duplicata*, (?) *humilis* holotype and paratypes p. 242, in New York State Mus., KILFOYLE **58**; *C.* genus diagnosed p. 13, cf. *contracta* p. 14 figd., sp. indet. p. 28, MAXWELL **78**; *C. kursica* **sp. nov.** p. 97 figd., cf. *griasica*, *svetica* **sp. nov.** p. 98 figd., sp. p. 99, Devonian, Famennian Latvia, LIEPINSH Latv. P.S.R. Zinat. Akad. Vestis **12** 89 1954; *C. empozadense* p. 124 type in Mendoza Museum, RUSCONI **107**; *C. empozadense*, RUSCONI **108** p. 68; *C. lecomptei* **sp. nov.** p. 197, figd. transverse sections pl. 1, *akrosteges* p. 205 figd., Ur. Devonian Famennian, Belgium, Vol. Jubil. Victor van Straelen Bruxelles **1** 1954.

†*Costellirostra peculiaris* hypotypes p. 255, 256, in New York State Museum, KILFOYLE **58**.

†*Leiorhynchus limitaris*, hypotype, *robustus* holotype, *barabuensis* hypotypes, in Univ. California Coll., PECK & MCFARLAND **97** p. 301; *L. carboniferum polypleurum* figd., Namurian Spain, SCHMIDT **116** pl. 2.

†*Nudirostra athabascensis*, *insculpta* **sp. nov.** p. 178, *albertensis*, *gibbosa* species group p. 179, *gibbosa walcotti*, *gibbosa seversoni* **subsp. nov.**, *utahensis ventricosa* p. 180 all figd. Upper Devonian, Canadian Rocky Mts., MCCLAREN West Canada Sed. Basin. Amer. Ass. Petrol. Geol. **1954**.

†*Plethorhyncha barrandi* hypotype, *pleiopleura* hypotypes p. 303, in New York State Museum, KILFOYLE **58**.

†*Pugnax pugnus* statistical study and variation p. 563, 564, *pseudo pugnus* **sp. nov.** p. 570 figd. Lower Carboniferous Derbyshire and Yorkshire, PARKINSON J. Paleont. **28** 5 1954; *P. magdalena* holotype in New York State Museum, KILFOYLE **58**; *P. acuminatus* statistical study of variation p. 668, *mesogonus* p. 674, PARKINSON **95**.

†*Pugnoides* cf. *duplicatus* morphotype in New York State Museum, KILFOYLE **58** p. 310; *P. kakwaensis* **sp. nov.** Upper Devonian Jasper Park, Canadian Rocky Mts., MCLAREN West. Canada Sed. Basin, Amer. Ass. Petrol. Geol. **1954** p. 176 figd.

†*Rhynchonella* group of *Camarotoechia daleidensis* Romer, p. 112 figd., DAHMER **26**.

†*Rhynchopora deltoidea* **sp. nov.** p. 188 figd., Lower Carboniferous Fife, Scotland, REED Proc. Leeds Phil. Soc. (sci. sect.) **6** 3 1954.

†*Sphaerirhynchia* genus discussed *S.* (*Sphaerirhynchia*) *wilsoni*, SCHMIDT **117** p. 235.

†*Sphaerirhynchia* (*Estonirhynchia*) **subgen. nov.** discussed p. 236 type species *S.* (*E.*) *estonica* **sp. nov.** p. 236, figd. serial sections and reconstructed longitudinal section to show marginal spines. Silurian Esthonia, SCHMIDT Senckenbergiana **35** 3–4 1954.

†*Stegerhynchus neglectum* hypotypes in New York State Museum, KILFOYLE **58** p. 334.

†*Terebratuloidea* genus discussed p. 337 (?) *lenumbona* **sp. nov.** p. 338 figd., Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist **105** 3 1954.

†*Uncinulus orbignyanus eifeliensis* **subsp. nov.** p. 511, 149, figd. interiors figd. p. 512, serial sections p. 513 Devonian, Couvinian, Poland, BIERNAT Acta Geol. Polon. Warszawa **4** 1954; *U. mutabilis* hypotypes p. 344 in New York State Museum, KILFOYLE **58**; *U.* sp. cf. *pilus* p. 137 figd., cf. *subwilsoni* p. 138 figd., cf. *eucharis* p. 139 figd., RENAUD **103**.

†*Wellerella* genus discussed p. 334, *elegans* ? p. 335, *nanas*, *longicosta* **spp. nov.** p. 336, *magnisepta* **sp. nov.** p. 337, all figd., Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954; *W.* sp. ind. p. 21 figd., PEDERSON **98**; *W. osagensis* p. 14 figd., BURK **14**.

†*Zilimania* ? **gen. nov.** nom. nud. used by B. P. Markovsky for *Rhynchonella polonica* Guerich in Permian Excursion guide, southern part Upper Devonian, Famennian, Zighan River, Russia. Intern. Geol. Congr. USSR., sess. **17** 1937 table iv, opp. p. 112.

RHYNCHONELLIDAE

†*Cirpa* **subgen. nov.** of *Rhynchonella* see under *Rhynchonella* (*Cirpa*).

†*Cretirhynchia limbata* p. 27 fig. internal characters described, PETTITT **99**.

Cryptopora gnomon p. 364, COOPER **23**.

†*Gibbirhynchia* genus emend. distinguishing characters from *Tetrarhynchia* p. 28, musculature figured p. 29, species listed p. 30, *amalthei* p. 32 figd., lectotype designated p. 33, transverse sections fig. 3 p. 35, *gibbosa* p. 36 figd., *micra* **sp. nov.** p. 38 crura figd. p. 39, *muirwoodae* **sp. nov.** p. 40, *northamptonensis* p. 42 figd., and fig. 1, *thorncombiensis* figd. fig. 1, p. 43, transverse sections fig. 5, crura in longitudinal section fig. 6 p. 46, *tiltonensis* **sp. nov.** p. 46 figd., transverse sections fig. 7 p. 49 Middle Lias (Domerian) Great Britain and Germany, AGER Proc. Geol. Assoc. Lond. **65** 1 1954.

†*Hemithyris psittacea woodwardi* (figd. by Yokoyama as *Rhynchonella psittacea* var. *woodwardi*), figd. pl. 37, TAKI & OYAMA **140**.

†*Lamellaerhynchia* **gen. nov.** type species *Rhynchonella multiformis* (Roemer 1839, pl. 2, fig. 22, pl. 18, fig. 8 only), p. 274, 275, figd., serial sections p. 276, *desori* p. 277 figd. sections p. 278, *hauteriviensis* **sp. nov.** p. 279 figd. sections p. 280 Lr. Cretaceous Valanginian and Hauterivian Switzerland and Germany, BURRI Eclog. geol. helvet. **46** 2 1953.

†*Orbirhynchia* **gen. nov.** type species *O. orbignyi* **sp. nov.** p. 29 fig., *mantelliana* p. 31, zonal variation of external features in genus p. 32, 33, transverse sections p. 34, *obscura* **sp. nov.** p. 35, *parva* **sp. nov.** p. 36, *wiesti* p. 37, *multicostata* **sp. nov.** p. 38, *praedispansa* **sp. nov.** p. 39, *cuvieri* p. 40, transverse sections p. 42, *extensa* **sp. nov.** p. 43, *compta* **sp. nov.** p. 44, *orbignyi* **sp. nov.** p. 45 sections, *heberti* **sp. nov.** p. 46, *reedensis* p. 47, *dispansa* **sp. nov.** p. 48, *pisiformis* **sp. nov.** p. 49, *bella* **sp. nov.** p. 50, *granum* **sp. nov.** p. 51 Chalk England, PETTITT Mon. Palaeont. Soc. for 1953 **1954**.

†*Plicarostrum* **gen. nov.** type species *P. hauteriviense* **sp. nov.** p. 281, 282, figd. sections p. 283, Lower and Middle Hauterivian Switzerland, BURRI Eclog. geol. helvet. **46** 2 1953.

†*Rhynchonella pachytheca* figd. p. 18, 43 pl. 5, TÜRKÜNAL **130**; *R. varians pommerana* in Middle Callovian loose blocks, WETZEL **137** p. 155; *R. pisa* syntypes Hall & Whitfield, (?) *raricosta* holotype Whitfield in Univ. California Coll., PECK & MCFARLAND **97** p. 302; *R. decorata* age of Calcaire à *R. decorata*, in Lorraine discussed, possibly Upper Bajocian p. 38, MAUBEUGE **76**; *R. ala, retracta* p. 428, HÄGG **47**; *R. ala, hagenowi* p. 61, *limbata, plicatilis, triangularis* p. 62, HÄGG **48**; *R. ala, triangularis*, sp. recorded p. 261, HÄGG **49**; *R.* sp. p. 218, BORN **12**; *R. plicatissima* p. 197 figd., *p.* var. *rectemarginata* p. 200 figd., cf. *latifrons* p. 201 figd., *subtriquetra*, p. 202 figd., CONTI **21**.

†*Rhynchonella* (*Cirpa*) **subgen. nov.** *primitiva, secunda* **spp. nov.**, *iphimedia* Di Stefano, Lias Sicily. De Gregorio, Ann. géol. paléont. Palermo **53** 1930 p. 40 [omitted from 1935 Z. Record].

†*Rhynchonellina alpina* p. 202, *paronai* p. 203 both figd., CONTI **21**.

†*Sulcirhynchia* **gen. nov.** type species *Rhynchonella valangiensis* de Loriol 1864, p. 270–272 figd., serial sections p. 273, Lr. Cretaceous, Valanginian Switzerland, BURRI Eclog. geol. helvet. **46** 2 1953; *S. valangiensis*, serial sections, foramen and development of deltidial plates, growth of shell, variation of species, crura reconstructed from serial sections, BURRI **16** p. 419–425.

STENOSCISMATACEA

STENOCISMATIDAE

†*Stenoscisma* genus discussed and figd. p. 338, *multicosta* **sp. nov.**, *kala* **sp. nov.** p. 339, *hueconiana* p. 340 figd. Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Stenoscisma* [*Camarophoria*] cf. *isorhyncha* recorded, serial sections p. 313, GEORGE **43**.

SPIRIFEROIDEA

ATRYPACEA

ATRYPINIDAE

†*Atrypina* sp. ? hypotype p. 233 in New York State Museum, KILFOYLE **58.**

ANAZYGIDAE

†*Zygospira cincinnatiensis* hypotype, *concentrica* hypotypes, *modesta* hypotype in New York State Museum, KILFOYLE **58** p. 346.

ATRYPIDAE

†*Atrypa reticularis* from Silurian Woolhope Limestone of Worcestershire measured and compared with Alexander's figures (1948) for Wenlock Shale and Limestone specimens, HARDIE **50** p. 16; *A. varistriata* **sp. nov.** p. 514, p. 149, figd., serial sections p. 515 interiors of both valves figd. p. 516, Devonian Couvinian Poland, BIERNAT Acta geol. polon. Warszawa **4** 1954; *A. nodostriata* hypotype figd. Hall & Whitfield in Univ. California Coll., PECK & MCFARLAND **97** p. 301.

†*Clintonella bodenbenderi* hypotype p. 254 in New York State Museum, KILFOYLE **58.**

COELOSPIRIDAE

†*Anoplotheca lepida* p. 516 figd., serial sections p. 518, BIERNAT **11.**

†*Coelospira concava* hypotype p. 254 in New York State Museum, KILFOYLE **58.**

†*Leptocoelia flabellites* hypotypes p. 278–281, in New York State Museum, KILFOYLE **58.**

SPIRIFERACEA

SPIRIFERIDAE

†*Acrospirifer cyclopterus* hypoplastotype, p. 227; *A. gaspensis* p. 227, 228 hypotypes and plastotypes, *murchisoni* hypotypes p. 228, 229; *primaevus* var. *atlanticus* cotypes hypotypes p. 229, 230 in New York State Museum, KILFOYLE **58.**

†Ambocoeliinae subfamily diagnosed p. 341, STEHLI **122.**

†*Attenuatella* **gen. nov.** type species *A. texana* **sp. nov.** p. 343 figd., *attenuata* (formerly *Crurithyris*) p. 343, Permian W. Texas and Mexico, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Australospirifer antarcticus* p. 234, 235 hypotypes, *hawkinsi* hypotypes p. 235, *iheringi* hypotypes *laurosodreanus* hypotypes p. 236, in New York State Museum, KILFOYLE **58.**

†*Brachyspirifer pedroanus* hypotypes in New York State Museum, KILFOYLE **58** p. 240.

†Brachythyrinae subfamily discussed p. 26, MAXWELL **78.**

†*Brachythyris* genus discussed p. 26, *davidis* p. 27 figd., cf. *davidis*, sp. p. 39 figd., cf. *pinguis* p. 45 figd., MAXWELL **78.**

†*Costispirifer arenosus* hypotypes in New York State Museum p. 256, KILFOYLE **58.**

†*Crurithyris* genus discussed and figd. p. 341, *sulcata* **sp. nov.**, *inflata* **sp. nov.** p. 342 Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954; *C. carbonaria* figd. Namurian Spain, SCHMIDT **116** pl. 2; *C.* genus discussed p. 45, *granularis* **sp. nov.** p. 46 figd., Pennsylvanian Brazil, DRESSER Bull. Amer. Paleont. Ithaca **55** 149 1954.

†*Cyrtia radians* Hall and Clarke syntype in Univ. California Coll., PECK & MCFARLAND **97** p. 301.

†*Cyrtiopsis schkedensis* **sp. nov.** p. 105 figd. Devonian Famennian Pre-Baltic, LIEPINSH Latv. P.S.R. Zinat. Akad. Vestis **12** 89 1954.

†*Cyrtospirifer* cf. *postarchiaci* p. 99 figd., cf. *lebedianicus*, *l.* var. *akmenensis* **var. nov.** p. 100 figd., *kapsedensis* **sp. nov.** p. 101 figd., *k.* var. *differens* **var. nov.**, *latiformis* **sp. nov.** p. 102, *l.* var. *incurvata* **var. nov.**, *pakruojensis* p. 103 figd.; sp. p. 105, Devonian, Famennian ?Latvia, LIEPINSH Latv. P.S.R. Zinat. Akad. Vestis **12** 89 1954 (in Russian); *C.* genus diagnosed, *reidi* p. 10, MAXWELL **78**; *C.* cf. *kindlei* p. 205 figd., sp. indet. a p. 206, sp. indet. b. p. 207 both figd., sp. indet. C., HAYASAKA & MINATO **53**; *C. disjunctus* p. 261 morphotypes in New York State Museum, KILFOYLE **58**; *C.* sp. figd. p. 49, THOMAS & DICKINS **126.** *Spirifer* (*C.*) cf. *torna-*

censis recorded Breconshire, Lower Carboniferous, Z zone, GEORGE **43.**

†*Delthyris perlamellosa* hypotype p. 265 in New York State Museum, KILFOYLE **58.**

†*Dimegelasma* genus discussed, *elegante* **sp. nov.** figd. p. 15, *kennedyensis* **sp. nov.** p. 25 figd., Lower Carboniferous Tournaisian, Queensland, MAXWELL Univ. Queensland Dept. Geol. **4** 5 1954.

†*Elytha fimbriata* hypotype in New York State Museum, KILFOYLE **58** p. 267.

†*Howellella vanuxemi* var. *hartnageli* paratypes in New York State Museum, KILFOYLE **58** p. 620; *H. crispa* hypotypes in New York State Museum, KILFOYLE **58** p. 276.

†*Hysterolites* cf. *carinatus* p. 520 figd., *alatiformis variabilis* **subsp. nov.** p. 521, p. 150 figd., interior pedicle valve figd. p. 521, Devonian, Couvinian Poland, BIERNAT Acta geol. polon. Warszawa **4** 1954.

†*Hysterolites* (*Acrospirifer*) *intermedius* p. 522 figd. text-figs. p. 523, interior pedicle valve p. 524, BIERNAT **11.**

†*Hysterolites* (*Paraspirifer*) cf. *cultrijugatus* p. 524 figd., BIERNAT **11.**

†*Martinia glabra* figd. Namurian, Spain, SCHMIDT **116** pl. 2; *M. glabra* onomatype in New York State Museum, KILFOYLE **58** p. 291.

†*Maya insculpta* figd. Namurian Spain, SCHMIDT **116** pl. 2.

†*Mucrospirifer* genus discussed *kennedyensis* **sp. nov.** p. 18 Lower Carboniferous Tournaisian Queensland, MAXWELL Univ. Queensland Dept. Geol. **4** 5 1954.

†*Neospirifer* genus discussed, *bakeri wyomingensis* **subsp. nov.** Permian (Wolfcamp) U.S.A., Wyoming, Pederson, J. Paleont. **28** 1 1954 p. 18 figd.; *N.* genus discussed and figd. p. 340, sp. p. 341, STEHLI **122**; *N.* genus discussed, *cameratus* p. 57 figd., var. p. 61, DRESSER **32.**

†*Paramartinia lingulata* bored by parasitic worm, and shell probably orientated during life with sulcate pedicle valve uppermost, LAMONT **64** p. 190.

†*Phricodothyris* genus discussed p. 49, *perplexa* p. 50 figd., DRESSER **32**; *P.* genus diagnosed, *lineata* p. 37 figd., MAXWELL **78**; *Athyris* (*P.*) *tripustulosa* figd. Namurian Spain, SCHMIDT **116** pl. 2.

†*Prospira* **gen. nov.** type species, *P. typa* **sp. nov.** p. 35 figd., *prima* **sp. nov.** p. 36 figd. Lower Carboniferous Tournaisian, Queensland, MAXWELL Univ. Queensland, Dept. Geol. **4** 5 1954.

†*Reticularia curvata* p. 525 figd., text-figs. pedicle valve p. 526, BIERNAT **11**; "*R.*" cf. *bicostata* hypotype in New York State Museum, KILFOYLE **58** p. 313.

†*Sinospirifer sinensis* var. *australis* p. 203 figd., HAYASAKA & MINATO **53**; *S.* genus discussed p. 23, *morganensis* **sp. nov.** p. 24 Lower Carboniferous Tournaisian, Queensland, MAXWELL Univ. Queensland Dept. Geol. **4** 5 1954.

†*Spirifer pellicoi* figd. Devonian Spain, GARCÍA-FUENTE **39**; *S. opimus* p. 11 figd., sp. p. 11, BURK **14**; *S. wakoniggi* **sp. nov.** Palaeozoic N. Spain p. 110, figd., pl. 5, *strangwaysi* var. *lata* p. 112 figd., DAHMER Publ. [Alem.] extran. Geol. Esp. Madrid **6** 1952; *S.* sp., *rockymontanus*, *mosquensis* p. 57 figd., Carboniferous Spain, GARCÍA-FUENTE **40**; *S.* genus diagnosed and discussed, cf. *liangchowensis* p. 48, MAXWELL **78**; *S S. bisulcatus* vars. *roscobiensis*, and *acuticardinalis* shells bored by *Conchotrema* worm burrows, LAMONT **64** p. 190; *S.* cf. *striatus*, *bisulcatus* figd., Namurian Spain, SCHMIDT **116** pl. 2; *S. primaevus*, cf. *primaevus* p. 140 figd., *fallax*, *subspeciosus*, *subsulcatus* p. 141, *pellicoi* p. 142, RENAUD **103**; *S. maia* hypotype in Univ. California Coll., PECK & MCFARLAND **97** p. 302; *S. speciosus* figd. pl. 7 p. 43, TÜRKÜNAL **130**; *S.* genus discussed p. 52, *rockymontani* p. 53 figd., DRESSER **32**; "*S*" sp. hypotypes Clarke 1909 p. 324, *aroostookensis* holotype and hypotypes p. 325, *clarkei* holotype *coelhoanus* holotype, *concinnus* hypotypes p. 326, cf. *concinnus* hypotypes p. 327, *cymindis* cotypes p. 328, *derbyi* hypotypes p. 329. *macropleurides* holotypes p. 330, *modestus* var. *nitidulus*

cotypes p. 330, *pirssonae* cotypes p. 331, *plicatus* hypotypes p. 331, *subcuspidatus* var. *lateincisus* hypotypes p. 333, in New York State Museum, KILFOYLE **58**.

†*Spirifer* (*Martinia*) *lineata* hypotypes in Univ. California Coll., PECK & MCFARLAND **97** p. 302.

†*Spirifer* (*Spinocyrtia*) *lateincisus*, evolution and variation illustrated p. 193–196, 217, formenreihe p. 196, *longeincisus* var. *dahmeri* **var. nov.** p. 198, var. *typica* p. 199, 218, shell thickening p. 202, *subcuspidatus* group phylogeny p. 202, subgroups of *mediorhenanus* p. 216, *incertus* p. 216, *humilis* p. 206, 216, *tenuicosta* p. 207, 217, *subcuspidatus* p. 208, 216, *montanus* p. 216, *bilsteinensis*, *goslariensis*, *crassifulcitus* p. 217, *brevifulcitus*, *robustifulcitus*, *latefulcitus*, *longeincisus* var. *typica* p. 218, var. *wetteldorfensis* p. 218, var. *dahmeri* **var. nov.** *subcuspidatus* p. 219, *geesensis* p. 219 all figd., SIMON Geol. Jb. **68** 1954.

†*Spirifer* (*Tylothyris*) *carlopsensis* **sp. nov.** p. 187 figd., Lower Carboniferous Fife, Scotland, REED Proc. Leeds Phil. Soc. (sci. sect.) **6** 3 1954.

†Spiriferacea superfamily diagbosed, STEHLI **122** p. 340.

†*Sulcatospirifer* **gen. nov.** type species *S. primus* **sp. nov.** Upper Devonian Famennian Queensland, p. 11 figd., text-figd. p. 13, MAXWELL Univ. Queensland Dept. Geol. **4** 5 1954.

†*Tenticospirifer* genus discussed *grandis* **sp. nov.** p. 16, sp. p. 18 Lower Carboniferous, Tournaisian Queensland, MAXWELL UNIV. Queensland Dept. Geol. **4** 5 1954.

†*Tylothyris mesacostalis* morphotypes in New York State Museum, KILFOYLE **58** p. 344.

ROSTROSPIRACEA

†Rostrospiracea superfamily diagnosed, STEHLI **122** p. 351.

MERISTELLIDAE

†*Meristella bella* hypotypes in Univ. Californ. Coll., PECK & MCFARLAND **97** p. 302; *M. champlaini* cotypes and hypotypes p. 293 *lata* hypotypes p. 294 in New York State Museum, KILFOYLE **58**.

†*Meristina empozadense* p. 68, RUSCONI **108**; *M. empozadense* p. 124 type in Mendoza Museum, RUSCONI **107**.

†*Nucleospira rotundata* syntypes in Univ. California Coll., PECK & MCFARLAND **97**.

†*Whitfieldella nitida* hypotypes p. 345 in New York State Museum, KILFOYLE **58**.

ATHYRIDAE

†*Anathyris alejensis* p. 143, RENAUD **103**.

†Athyrinae diagnosed, MAXWELL **78** p. 42.

†*Athyris ferronesensis* figd. Devonian Spain, GARCÍA-FUENTE **39**; *A. membranacea* figd., Lr. Carboniferous Spain, GARCÍA-FUENTE **40**; *A.* sp. morphotype, *angelica* morphotype, *hera* holoplastotype p. 232 in New York State Museum, KILFOYLE **58**; *A.* ex gr. *concentrica* p. 106 figd., LIEPINSH **67**; *A. ferronesensis*, cf. *concentrica* p. 142, *pelapayensis* p. 143, RENAUD **103**; *A. subquadrata*, *subtilita* hypotypes figd. Whitfield in Univ. California Coll., PECK & MCFARLAND **97** p. 301.

†*Cleiothyridina* cf. *roissyi* recorded Lower Carboniferous Z. zone, Breconshire, serial sections p. 314, GEORGE **43**; *C.* genus discussed p. 38, *casteri* **sp. nov.** p. 39, *derbyi* **sp. nov.** p. 42, comparison with *sublamellosa*, *orbicularis* and *royssii* p. 43, Pennsylvanian Brazil, DRESSER Bull. Amer. Paleont. Ithaca **35** 149 1954; *C.* sp. p. 13 figd., BURK **14**; *C.* genus discussed p. 42, *australis* **sp. nov.** p. 43, Lower Carboniferous Tournaisian, *transversa* **sp. nov.** p. 46, sp., *biconvexa* **sp. nov.** p. 47 MAXWELL Univ. Queensland Dept. Geol. **4** 5 1954; *C. sublamellosa* figd. p. 188, REED **102**.

†*Composita dawsoni* onomatype p. 255 in New York State Museum, KILFOYLE **58**; *C.* cf. *ambigua* recorded Lower Carboniferous, C2 subzone, Breconshire p. 314, serial sections p. 315, GEORGE **43**; *C.*

genus discussed p. 11, *subtilita* var. *subtilita* figd., var. *ovata* p. 12 figd., var. *trinuclea* figd., sp. p. 13, BURK **14**; *C. ovata, subtilita* p. 19 figd., PEDERSON **98**; *C.* genus discussed p. 351 and figd., *emarginata affinis* figd. p. 352, STEHLI **122.**

PUNCTOSPIRACEA

†Punctospiracea superfamily discussed, with Spiriferinidae and Cyrtinidae **fam. nov.**, STEHLI **122** p. 344.

SPIRIFERINIDAE

†Spiriferinidae family discussed and genera listed, STEHLI **122** p. 344.

†*Altiplectus* **gen. nov.** type species *A. cooperi* **sp. nov.** Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954 p. 349 figd.

†*Callispirina* genus diagnosed p. 345, STEHLI **122.**

†*Crenispirifer* **gen. nov.** p. 347 figd., type species *Spiriferina angulata* R. E. King 1930 p. 348 Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Paraspiriferina* genus diagnosed, STEHLI **122** p. 345.

†*Punctospirifer kentu[c]kyensis* figd. Namurian Spain, SCHMIDT **116** pl. 2; *P.* genus discussed p. 62, *transversa* p. 63 figd., DRESSER **32**; *P.* genus discussed p. 345, (?) *irenae* **sp. nov.** Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Reticulariina* genus diagnosed p. 345, STEHLI **122.**

†*Sphenospira* **gen. nov.** type species *S. alta* Hall 1867 Devonian Conewango group Pennsylvania and New York, homoeomorph of *Syringospira* COOPER Journ. Paleont. **28** 3 1954, p. 330 figd.

†*Spiriferellina* genus discussed p. 346 figd., *newelli* **sp. nov.** p. 347 figd., Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Spiriferina alpina* p. 194 figd., CONTI **21.**

†*Spiriferinaella* genus diagnosed p. 345, STEHLI **122.**

†*Syringospira* genus discussed, morphology, longitudinal and transverse sections, p. 325, figd., *prima* Devonian Percha formation New Mexico, COOPER **22.**

†*Syringothyris* genus discussed p. 40 *australis* **sp. nov.** p. 41 figd., Lower Carboniferous, late Tournaisian and early Visean, Queensland, MAXWELL Univ. Queensland, Dept. Geol. **4** 5 1954.

CYRTINIDAE

†*Cyrtina chalazia* holotype and hypotype p. 260. *rostrata* hypotypes p. 261 in New York State Museum, KILFOYLE **58**; *C. heteroclita* p. 526 figd., BIERNAT **11.**

†Cyrtinidae **fam. nov.** of Punctospiriferacea, STEHLI **122** p. 350.

RHYNCHOSPIRINIDAE

†*Eumetria* genus discussed p. 13, *sulcata* **sp. nov.** p. 14 figd., Pennsylvanian U.S.A., Wyoming, BURK J. Paleont. **28** 1 1954.

†*Hustedia* genus discussed *hessensis*, p. 350, STEHLI **122.**

†*Rhynchospira plateana* p. 124 type in Mendoza Museum, RUSCONI **107**; *R. plateana* p. 69 figd., RUSCONI **108.**

†*Rhynchospirina globosa* hypotypes in New York State Museum, KILFOYLE **58** p. 318.

†*Zigania* ?**gen. nov.** nom. nud. used by B. P. Markovsky for *Trematospira baschkirica* Tschern. in Permian Excursion guide, southern part, Upper Devonian, Famennian, Rjauziak and Sikaja Rivers, Russia, Intern. Geol. Congr. USSR. sess. **17** 1937, table iv, opp. p. 112.

GRYPHOIDEA

TEREBRATULACEA

CENTRONELLIDAE

†*Amphigenia parva* cotypes and hypotypes in New York State Museum, KILFOYLE **58** p. 230, 231.

†*Beachia amplexa* hypotypes, *thunei* holotype and hypotypes, p. 237, 238, in New York State Museum, KILFOYLE **58.**

†*Centronella glansfagea* hypotypes in New York State Museum, KILFOYLE **58** p. 242.

†*Etymothyris gaspensis* p. 271 holotype, paratypes, hypotypes in New York State Museum, KILFOYLE **58**.

†*Prionothyris diobolaris* cotypes p. 305, cf. *ovalis* hypotypes p. 305, *perovalis* hypotypes p. 306 in New York State Museum, KILFOYLE **58**.

†*Rensselaeria* sp. ? hypotypes p. 311, *elongata* hypotypes p. 312, *falklandica* cotypes p. 312 in New York State Museum, KILFOYLE **58**.

RHIPIDOTHYRIDAE

†*Globithyris callida* holotype and paratype, *diania* cotypes in New York State Museum, KILFOYLE **58** p. 273.

†*Prorensselaeria nylanderi* p. 309 hypotype in New York State Museum, KILFOYLE **58**

†*Rhenorensselaeria* cf. *crassicosta* hypotypes in New York State Museum, KILFOYLE **58** p. 314; *R.* cf. *strigiceps* p. 145, RENAUD **103**.

MEGANTERIDAE

†*Meganteris* cf. *inornata*, *inornata* ? figd. p. 144, RENAUD **103**.

DIELASMATIDAE

†*Cryptonella* (?) *ellsi* holotype p. 258, (?) *fausta* hypotypes p. 258 in New York State Museum, KILFOYLE **58**; *C. calvini*, Hall and Whitfield syntypes in Univ. California Coll., PECK & MCFARLAND **97** p. 301.

†Cryptonellinae subfamily diagnosed, STEHLI **122** p. 354.

†*Dielasma hastatum* var. *amygdaloides* figd. p. 187, REED **102**; *D. sacculus* hypotype in New York State Museum, KILFOYLE **58** p. 266; *D.* genus discussed and figd. p. 353, *diabloensis* **sp. nov.** p. 354 figd., Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†Dielasmatidae family diagnosed p. 352, STEHLI **122**.

†Dielasmatinae subfamily diagnosed, STEHLI **122** p. 352.

†*Glossothyropsis* genus discussed and figd., *robusta*, p. 356, *sinuata* **sp. nov.** p. 356, Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist **105** 3 1954.

†*Hemiptychina* (?) *waageni* cotypes in New York State Museum, KILFOYLE **58** p. 274.

†*Heterelasma* genus diagnosed p. 354, *geniculata* **sp. nov.**, *lenticularia* **sp. nov.** figd. p. 355, Permian W. Texas, STEHLI Bull. Amer. Mus. Nat. Hist. **105** 3 1954.

†*Mendathyris mainensis* hypotypes p. 291–293 in New York State Museum, KILFOYLE **58**.

†*Pleurothyris stewarti* holotype and paratypes, cf. *stewarti* hypotypes p. 304, 305, in New York State Museum, KILFOYLE **58**.

TEREBRATULIDAE

†*Cancellothyris africana* **sp. nov.** p. 723, Eocene Tanganyika, ELLIOTT Ann. Mag. Nat. Hist. (12) **7** 1954.

†*Chatwinothyris subcardinalis*, HÄGG **47** p. 428.

Chlidonophora incerta, COOPER **23** p. 364.

†*Concinnithyris abrupta*, HÄGG **47** p. 428.

†*Gryphus angularis*, *radiata* p. 17 figd., OZAKI **91**.

Gryphus cubensis, *bartschi*, *bartletti* p. 364, COOPER **23**.

†*Neoliothyrina* (?) *getulina* **sp. nov.** p. 904 figd. Lr. Cretaceous Algeria-Tunis frontier, DROT Bull. Soc. Géol. Fr. 6 **3** 9 1953.

†*Terebratula cogidumni* **sp. nov.** Eocene Sussex, ELLIOTT Ann. Mag. Nat. Hist (12) **7** p. 722 figd.; *T.* sp. p. 155, WETZEL **137**; *T. manuanensis* **sp. nov.** Cretaceous Cenomanian Zululand, MUIR-WOOD Trans. Geol. Soc. S.A. **56** 1954: 1, figd.; *T. punctata* p. 204 figd., CONTI **21**; *T.* sp. figured Mozambique, HENRIQUES DA SILVA **55** p. 2 figd. pl. 1, opp. p. 12; "*T*" *longirostris*, *praelustris*, sp. p. 261, HÄGG **49**; *T. carnea*, *ciplyensis*, *longirostris* p. 63, *obesa*, *praelustris*, *subrotunda* p. 64, sp. p. 65, HÄGG **48**; *T.* sp., HÄGG **47** p. 428.

†Terebratulacea superfamily discussed, STEHLI **122** p. 352.

†*Terebratulina crossei, peculiaris* (figd. by Yokoyama as *T. caputserpentis*) figd. pl. 20, YOKOYAMA **140**; *T. crossei* figd. p. 16, *simosensis*, n. sp. p. 17 figd., OZAKI **91**; *T.* sp. indet, KING **59**; *T. gracilis, striata*, HÄGG **47** p. 428; *T. rigida, striata* p. 62, HÄGG **48**; *T. striata* p. 262, HÄGG **49**; *T. edwardsi* **sp. nov.** p. 722, *wardenensis* p. 723 Eocene Sussex, ELLIOTT Ann. Mag. Nat. Hist. (12) **7** 1954.

Terebratulina retusa early lophophore figd. pl. 16, ELLIOTT **36**; *T. cailleti* p. 364, COOPER **23**; *T. caputserpentis* flagellate cells in lophophore comparable to those of Flagellates, TUZET & SANCHEZ **131**.

ZEILLERIIDAE

†*Waldheimia* cf. *lycetti* p. 205 figd., CONTI **21**.

†*Waldheimia* (*Zeilleria*) *pentagona* p. 205, CONTI **21**.

MEGATHYRIDAE

†*Argyrotheca londinensis* **sp. nov.** p. 724 Essex, *piperipyxis* **sp. nov.** p. 725, figd. Eocene Hampshire, ELLIOT Ann. Mag. Nat. Hist. (12) **7** 1954.

Argyrotheca barrettiana, lutea, schrammi p. 364, COOPER **23**.

†*Cistellarcula* **gen. nov.** type species *C. wrigleyi* **sp. nov.** Eocene France, ELLIOTT Ann. Mag. Nat. Hist. (12) **7** 1954 p. 726 figd.

DALLINIDAE

†*Coptothyris grayi* figd. pl. 37 (figured by Yokoyama as *Eudesia grayi* Dav.), TAKI & OYAMA **140**.

†*Dallina raphaelis* p. 18, figd., OZAKI **91**.

Dallina floridana p. 365, COOPER **23**.

†*Kingena wacoensis* figd. Cretaceous Mexico, MALDONADO-KOERDEL **73** p. 207; *K. lima* p. 262, HÄGG **49**.

†*Terebratalia gouldi* p. 17 figd., OZAKI **91**; *T. gouldi* Dall figd. by Yokoyama as *Terebratulina quantoensis*), *coreanica* figd. pl. 20, TAKI & OYAMA **140**

†*Trigonosemus pulchellus* p. 129, HÄGG **47**.

LAQUEINIDAE

†*Laqueus* sp. (figd. by Yokoyama as *Terebratella pulvinata* Dav.) figd., TAKI & OYAMA **140**; *L. blanfordi, quadratus* p. 18 figd., *rubellus* p. 19 figd., OZAKI **91**.

TEREBRATELLIDAE

†*Lutetiarcula* **gen. nov.** p. 727 type species *L. perplexa* **sp. nov.** Eocene France, ELLIOTT Ann. Mag. Nat. Hist. (12) **7** 1954.

†*Magas pumilus* p. 429, HÄGG **47**; *M. costatus, pumilus spathulatus* p. 65, HÄGG **48**; *M. costatus, spathulatus* p. 262, HÄGG **49**.

†" *Terebratella* " *nipponensis* figd. pl. 20, TAKI & OYAMA **140**.

Terebratella inconspicua early lophophore figd. pl. 16, ELLIOTT **36**.